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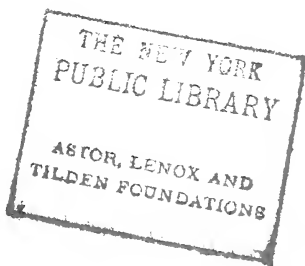
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**RUINS OF THE NEW CITY HALL, SAN FRANCISCO.**

253 -

# SAN FRANCISCO'S GREAT DISASTER

A Full Account of the Recent  
Terrible Destruction of  
Life and Property by

EARTHQUAKE, FIRE  
AND VOLCANO

In CALIFORNIA and at VESUVIUS

AND A BRIEF ACCOUNT OF ANCIENT AND MODERN EARTH-  
QUAKES AND VOLCANIC ERUPTIONS IN  
ALL PARTS OF THE WORLD

BY

**SYDNEY TYLER**

Correspondent, and Author of "The Japan-Russia War," Etc., Etc.

With an interesting Chapter on the Causes of this and  
other Earthquakes,—Growing Mountains  
and Volcanoes

BY

**RALPH STOCKMAN TARR,** 1867-1113

Professor of Geology in Cornell University; Formerly of the U. S. Geological Survey;  
Author of Geological Text-Books; Lecturer and Student  
of Previous Earthquakes on the Pacific Coast.

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## PREFACE.

San Francisco, ninth of the great American cities, has been visited by the greatest disaster which ever visited a community on this continent. Indeed, in all of the annals of the world, few calamities equal it, and, perhaps only the annihilation of Pompeii and Herculaneum, exceed it in the totality of destruction. The civilized world has stood aghast at the spectacle of a proud municipality laid in ruins. To the sudden horror of earthquake has been added the devastation of fire. Together these destroyers have swept away three-fourths of a magnificent city. Where rose great marts of trade, public buildings of every kind, temples of worship, temples of the drama; earthquake and fire left only shattered and smoldering heaps of debris. Where were reared fifty thousand homes, centres of social life, monuments of the people's thrift, tokens of civilization, prosperity and happiness, only gnarled skeletons of charred timbers and blackened bricks remained. Like lightning from a sunlit sky, like knife thrust in the dark, as dramatic, as unexpected as though the sky itself should fall in a molten deluge and engulf the earth, so fell this catastrophe. A great city reared by the faith and toil of half a century well nigh perished. The world stood appalled.

### PURPOSE OF THIS VOLUME.

History must open her pages to have enrolled among the tragic events of time, the story of this horror. Not only will the awful story remain the vivid possession of every man who has lived in the year and through the days when it has been unfolding, but future generations will pause

in awe to read. This volume is designed to give, with accuracy, in graphic detail, the story of the destruction of San Francisco. The publishers have had in mind, not only the present generation, but those to come after. The work, therefore, has been broadened. To give the readers of to-day, and of the years to come, a basis of comparison, to determine the tremendous extent of the catastrophe, the volume includes equally graphic descriptions of the notable visitations of Providence, which in the past have left death and havoc where they have fallen. It is a compendium of the great tragedies of history, a glossary where will be found descriptions of the moments in the history of the world, when mankind has stood at bay before nature and the elements locked in deadly struggle. In such crises the puny might of man stands revealed before the limitless power of the elements. Nature, herself, seems to shudder at her very power and after brief spasms of riot and anarchy, calls off the forces that threaten universal annihilation. In an hour a mighty mountain disembowels itself under the influence of Titanic, unknown, uncontrollable, internal forces and two great cities are buried, to remain lost for centuries. The mighty ocean, breaking for an hour from the laws of its control, engulfs a coast, gluts its receding waves with the carcasses of the dead, and leaves a city, flourishing an hour before, only a barren waste. In the bowels of the earth there is a shudder, as though a giant writhed in his deep, rock-ribbed prison, and, lo! a monster city, spreading for miles in prosperity over densely peopled hills, totters and falls. Where was peace, prosperity and happiness, in an hour is only the scene of indescribable desolation. Where were tens of thousands, secure in the enjoyment of life, accepting to-day's realities and calling to-morrow their own, now are ranks on ranks of the dead, and tens

of thousands of the living paralyzed with the fleeting glimpse they have had of the awful might of powers hid in the far, mystic chambers of nature.

#### UNCERTAINTY OF FINITE THINGS.

The world seems secure on her foundations, the heavens eternal, the universe unshakable, man supreme, until, in one of these dread hours, the narrow border between order and chaos, between law and anarchy in nature's realm, ends man's dream of supremacy, ends his faith that the universe is unshakable, that the heavens are eternal, that Old Earth is secure on her foundations. Such a revelation is the destruction of San Francisco. It is not alone the possession of the people of the day on which the awful visitation has fallen, but the property of all the ages, a pointed lesson of the mutability of the finite, a grim fable whose moral points to the realms of the Divine and infinite. The lesson is for all peoples, everywhere, for who can tell where next nature will run riot? Who knows that the next outbreak of elemental anarchy will confine devastation to a single locality? Who can give security that the globe in its entirety will not crumble into dust when next the natural law is violated?

#### AWFULNESS OF THE CATASTROPHE.

The publishers of this volume have approached the subject in a serious spirit. They have undertaken to unfold the story of the destruction of San Francisco from every standpoint. Such a catastrophe has many aspects. In the first hours of shock and dismay the human side is foremost. The minds of civilized peoples were filled with the thought of homes destroyed, of people fleeing in awful

terror from a foe in the bowels of the earth, pursued, too, by leaping flames, devouring what the throes of the disturbed earth had left standing. They saw thousands hungry, without water, threatened by pestilence. They saw the unburied dead, they heard the cries of the wounded, and millions of hearts went out to the victims; millions of purses flew open to send gold to succor and save. This aspect will always be uppermost in the history of the catastrophe. But a blow so sweeping paralyzes commerce and all of the linked activities that make a city prosperous and great. The effect of this aspect of the tragedy has been little less great in interest than the human sacrifice and suffering. The tide of humanity will close over the dead and only isolated hearts will ache. The blow to commercial life involves the whole community, and its wounds heal less slowly than those of the heart. San Francisco, for a quarter of a century, will feel in her industrial and commercial life, the effects of the blow that has fallen. This aspect has been seriously considered. There is a scientific aspect. Earthquakes, fortunately, are rare on this continent. For half a century scientists have been studying this problem, aided with every decade by broader conceptions and improved mechanical appliances. To-day, science confesses that, so far as seismic influences are concerned, little progress has been made. Every such visitation adds to the information at hand. The San Francisco earthquake will be the subject of study far more thorough, made by men far better equipped for their task, than any study of a similar phenomenon ever made. The whole world may profit by the results. It is too early to give results, but full credit has been given to the men and the means which will be employed. It is an aspect of universal concern.

This catastrophe has given fresh proof that man is

linked in an universal brotherhood. Here is an important aspect. The fact that the government of the United States, every individual State and the whole body of the people flew to the aid of their stricken fellows in the Empire City of the West will appear in flaming letters on the shaft that to-day has reared to her memory in the plaisance of his tory. It has been demonstrated, too, that ties of sympathy unite the remotest sections of the earth, for, from the sovereigns of the nations of the world have come words of sorrow and sympathy. No student of his time, no future student of our time, can overlook the marvellous development in recent times of the spirit of brotherhood among men, and the San Francisco tragedy has proved a climax in this development. Just as, in the history of the country there has been no such other event to unite men's hearts, so there has never been so noble a demonstration of the power of men's hearts to feel the griefs and reach out to share the burdens of others. This is an aspect to which attention has been paid, commensurate with its importance.

#### OTHER VISITATIONS.

Vesuvius, after twenty centuries of activity, has only recently added another to the many tragedies it has occasioned. This fresh work of destruction is reviewed, together with the ever-old story of the destruction of Pompeii and Herculaneum. Other notable earthquakes, floods, and volcanic eruptions are recorded, with the accuracy which historical perspective permits.

In the author, the publishers have been fortunate. Mr. Tyler is even now before the public as the author of a brilliant historical work, "The Japan-Russia War." The publishers called upon Mr. Tyler to tell, in his well-known graphic style, the story of the catastrophe, and were greatly

pleased to immediately receive his acceptance of the task. His work speaks for itself. The publishers feel assured that the same welcome will be accorded this timely, splendidly, if quickly done chronicle, that has been given to the several notable historical works from the pen of the same author.

As in the case of the recent history of the great Far Eastern war, Mr. Tyler has illuminated his theme with a notable collection of photographs. These are an admirable complement to the text. They bring before the eye, more graphically than any pen could tell, the story of havoc, jointly wrought by earthquake and fire. They show the city in its pride and they show that same city levelled and crumbled in ashes. The publishers believe that this volume represents a chronicle of the San Francisco disaster that will not be excelled, and present it to the public secure in the belief that it will prove, not only of interest for the moment, but a permanent contribution to literature, an invaluable possession in the homes and libraries of those who would have their knowledge extend to the most dramatic, and awe-inspiring events unfolded from the scroll of Time.

THE PUBLISHERS.



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BY PROF. RALPH S. TARR.

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# EARTHQUAKES AND THEIR CAUSES.

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BY PROFESSOR RALPH S. TARR, OF CORNELL UNIVERSITY.

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It is a human characteristic to look for coincidences and to allow one coincidence to counterbalance many exceptions, for while these do not attract the attention, the coincidences fix themselves firmly in the mind. This tendency is well illustrated in the widespread but fallacious belief in the influence of the moon on the weather, and of the occurrence of the equinoctial storm. It is now finding expression in the widespread belief that because Vesuvius is in the same general latitude as the earthquake stricken Caucasus and San Francisco regions, there must be some relation. In proof of this assumption, other coincidences are called to mind; but all failures to show sympathy of earth disturbances are overlooked. It is the duty of the scientific men to take into account all facts, weigh them, study their relation to one another, and draw conclusions from all and not from a portion of the facts.

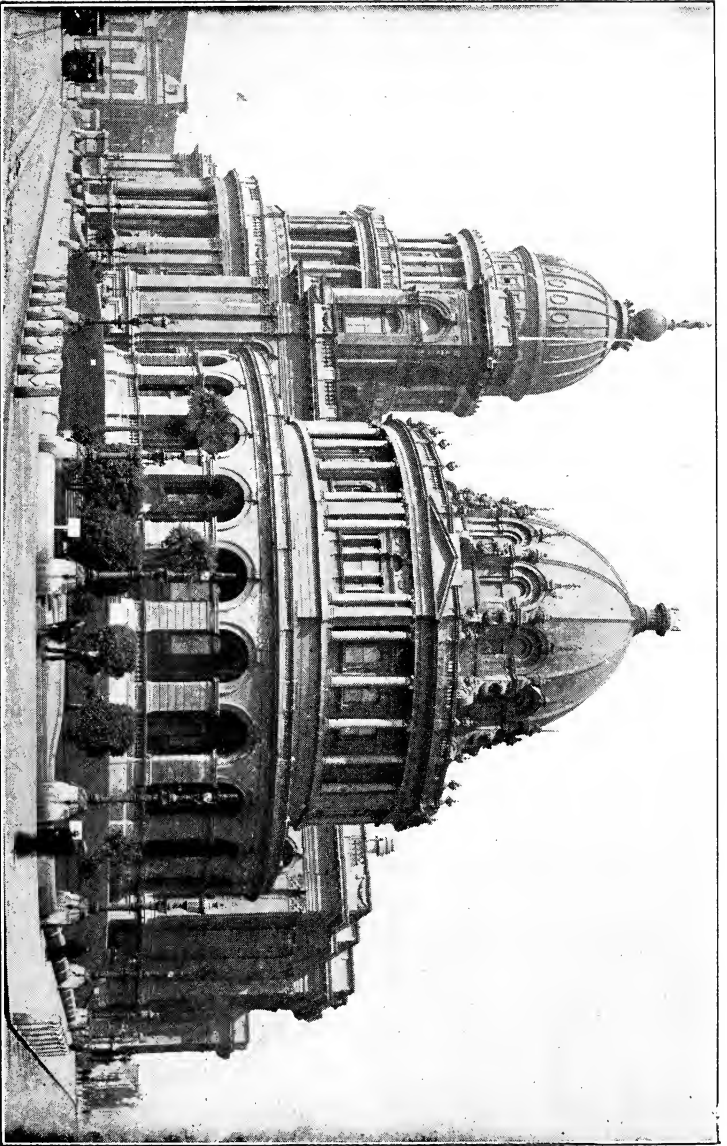
## VESUVIUS AND THE EARTHQUAKE.

By such methods of study and comparison geologists have so far been unable to detect any definite relation between the eruption of volcanoes and the shaking of the earth's crust in remotely separated parts of the earth; consequently it is all but universally held by students of the subject that the recent eruption of Vesuvius is in no known way related to the recent earthquakes. As a matter of fact, the eruption of Vesuvius does not appear to have been one of great vigor; it is certainly not to be compared

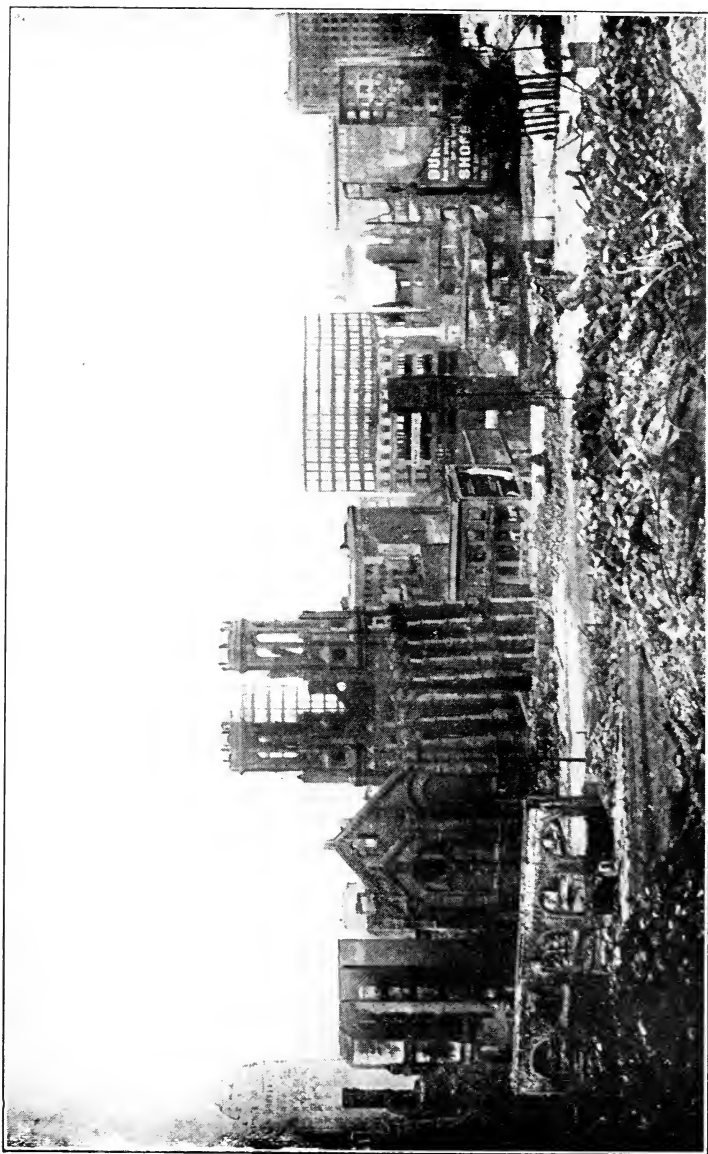
in violence with a number of eruptions which have occurred in other parts of the earth in the last score of years; it was unusually vigorous for the present day Vesuvius, and it occurred in the midst of a densely populated land, consequently it attracted widespread notice. Had it been in Central America and several times more violent, it might have received a passing notice in the papers, but hardly more. In the same way the San Francisco earthquake shock is certainly not the most violent one which has been noticed in recent times. It was undoubtedly, one of great vigor, but its destructiveness is entirely out of proportion to its violence, because of the accidental circumstance that the center of greatest disturbance passed near or through a large city.

#### LOCATION OF EARTHQUAKES AND VOLCANOES.

The great majority of volcanoes and the recorded earthquakes lie in two well defined belts or great circles on the earth. Vesuvius lies in one of these belts, California in the other. The Vesuvian belt extends from Central America through the West Indies, the Azores and Canary Islands, the Mediterranean region, the Caucasus, Himalayas, Philippine Islands, and a number of volcanic islands in the Pacific, including the Hawaiian Islands. Fifty-three per cent. of all recorded earthquake shocks have occurred in this zone. The second belt nearly encircles the Pacific. It includes the entire Andean chain, and the mountains of Western North America from Southern Mexico to the Aleutian Islands; thence it extends down the archipelago of the Kurile and Japanese Islands to the East Indies, New Guinea and New Zealand. In this belt, forty-one per cent. of all recorded earthquake shocks have occurred. It is to be noted



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that the two belts cross at two points, one in the Philippines and East Indies, the other in Central America. These two crossing places are the seats of the most destructively active volcanoes and of the most violent earthquakes on the earth.

Outside of these two zones there are only a very few active volcanoes, and although the rest of the earth far exceeds in area that included in the two belts, only six per cent. of all recorded earthquakes have occurred in it.

While this is true of the present day it has not always been the case. Geological evidence definitely proves that in past ages volcanic activity has been prominent in parts of the earth where active volcanoes are now entirely absent. Northern Europe and Eastern United States, for example, now possessing no active volcanoes, were in earlier geological periods the seats of stupendous volcanic activity and with it, without doubt, of numerous and violent earthquake shocks.

#### THE GROWTH OF MOUNTAINS.

The reason for the present distribution of volcanoes and earthquakes, and for their presence in past time where now they are absent, is definitely related to the growth of mountains. The two zones mentioned are the two portions of the earth's surface where mountains are at present in the most active state of formation. Likewise, in earlier geological times, when volcanoes were present in Northern Europe and Eastern America, mountain growth was then in progress in those parts of the earth. With the cessation of mountain growth both volcanoes and frequent earthquake shocks cease. Until mountain growth is at an end in the two belts mentioned, volcanic action and earthquakes

may be expected to occur throughout these zones. Just where or when they will occur in these zones cannot now be predicted; but certain sections are especially liable to their occurrence, and that part of California near San Francisco is one of the places in which earthquake shocks may be expected.

#### DISTRIBUTION OF EARTHQUAKES.

To make clear the difference between the conditions in a part of these zones of earthquake frequency and what by contrast may be called non-earthquake zones, we will compare briefly the State of California with the entire United States east of the 100th meridian. For many years a record has been kept of the earthquake shocks which have visited the State of California. Between 1892 and 1898, these records were published by the United States Geological Survey, and from these lists we find that from one to two score of noticeable earthquake shocks have been recorded each year in the State of California. Some of these have been of sufficient violence to have caused much destruction of property and life had the center of disturbance been in or close by a large city. Between the years 1727 and 1906, the number of noticeable earthquake shocks which visited California would undoubtedly be several thousand.

In the same period, while there have been numerous slight tremors and a few earthquake shocks that have attracted attention, only four earthquake shocks of importance are known to have affected that part of the United States which lies east of the 100th meridian. The first of these, called the Newburyport earthquake occurred in 1727, in and near Newburyport in eastern Massachusetts. The shak-



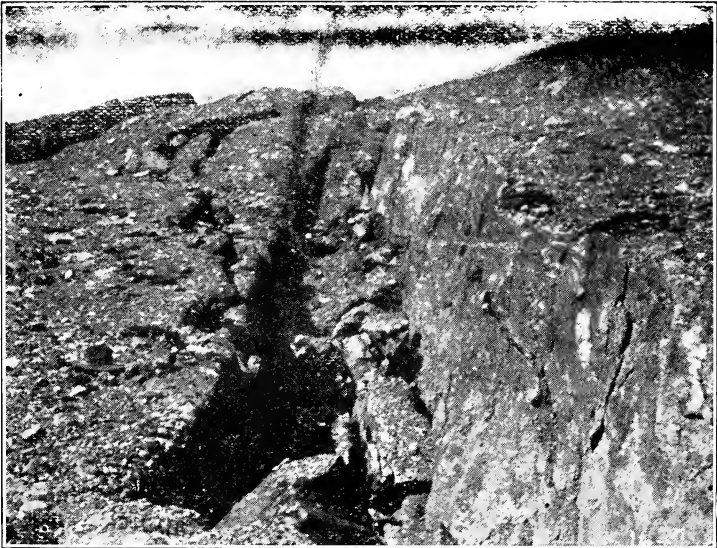
ing lasted for a long time but did little damage, attention being called especially to it because of the peculiarity of accompanying sounds which were compared to wild bellowing. In 1755 occurred the greatest shock ever felt in New England. It was strongest and most violent in and near Boston, but the destruction caused was slight, in large part, no doubt, because of the fact that most of the buildings were new, small, and built of wood. The third earthquake affected the country of the lower Mississippi, with the center of greatest disturbance in and near New Madrid, in Southern Missouri. Since this occurred in 1812, at a time when that country was occupied only by trappers, the destruction was slight; but the reports make it clear that the earthquake was of great violence, and that the shaking lasted for fully three months. Even at the present time its effects are visible, notably in the area known as the "sunk country," where the surface of the land was lowered and transformed to lake and swamp for a distance of seventy or eighty miles in a north-south direction, and thirty miles from east to west. The fourth and last notable earthquake of Eastern United States is known as the Charleston earthquake of August 31, 1886. This was a vigorous earthquake, but not one of first violence; and, although the center of disturbance was near Charleston, the destruction in that city was not at all comparable to that of the San Francisco shock.

The lesson to be learned from these facts is that while an earthquake shock may visit any part of eastern United States, the liability to earth shaking of any particular section is exceedingly slight. Earth movements are still in progress there, but only locally and of moderate intensity. In California, on the other hand, earth movements are still vigorous and occurring every here and there at frequent

intervals, sometimes with moderate effect, sometimes, as on April 18th, with sufficient violence, and sufficiently near centers of population, to cause great destruction. What is said of California applies to other portions of the two great zones of earthquake frequency; and what was said of Eastern United States applies to most other parts of the earth than those included in the zones of growing mountains.

#### CAUSE OF MOUNTAIN GROWTH.

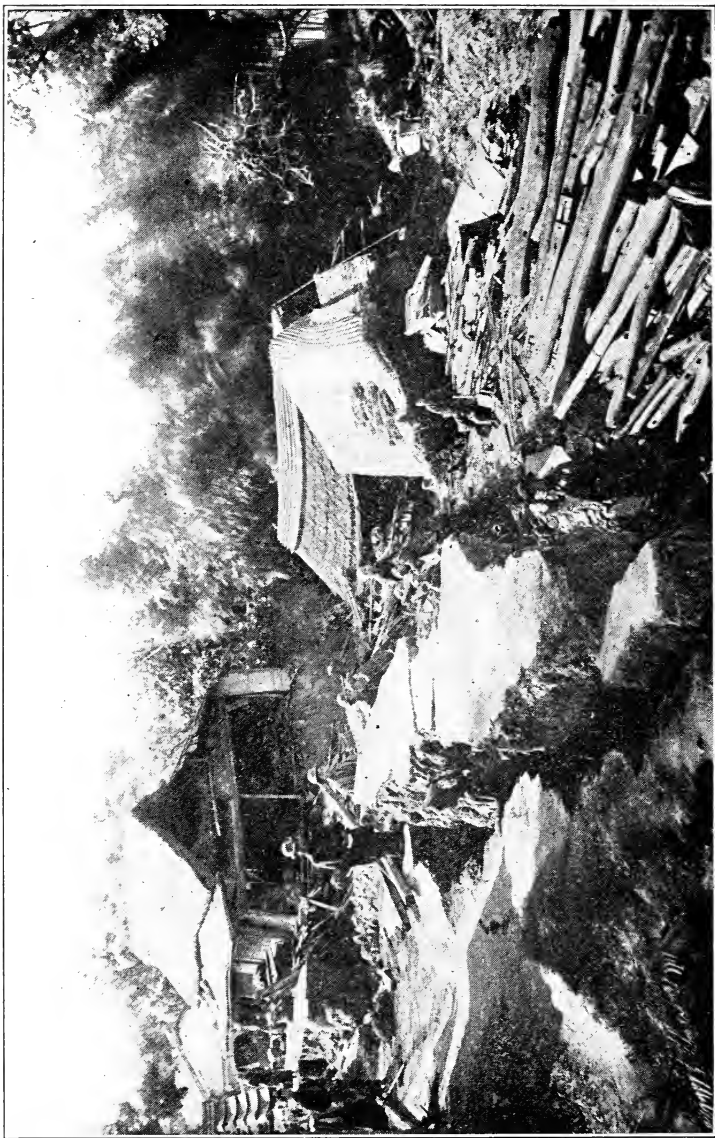
The reason for the conditions which have given rise to the recent eruption of Vesuvius and the San Francisco earthquake is a subject on which geologists and geophysicists are now at work. The immediate cause for individual shocks and eruptions is fairly well understood, but the fundamental cause for the distribution of mountains, volcanoes and earthquakes is still an obscure subject upon which only hypotheses can be offered. Without question it relates to the interior condition of the earth, and this condition is believed, upon numerous **lines of evidence**, to be that of a heated interior with a cold, rigid, outer crust of rock. The hypothesis best supported by the facts so far discovered is that of contraction. The heated interior is believed to be steadily losing its heat, and consequently shrinking. The cold outer crust is settling upon this shrinking interior, and as it settles the rocks move and break along planes which are known as *fault-planes*. The greatest areas of settling are the ocean basins, and as the crust settles in them a lateral thrust is exerted upon the margins which causes the crust to rise locally along lines of weakness whose original cause is not understood. Thus the settling in the great area of the Pacific is believed to be



**FAULT LINES IN YAKUTAT BAY, SHOWING HOW THE ROCKS ARE FRACTURED AT THE SURFACE. THE CLIFF ON THE LEFT WAS RAISED THREE FEET.**



**ELEVATED BEACH AND WAVE CUT BEACH, IN YAKUTAT BAY, HOISTED DURING THE EARTHQUAKE TO A HEIGHT OF 18 FEET. BARNACLES STILL CLING TO THE ROCKS.**



JAPANESE EARTHQUAKE OF 1891, SHOWING THE FISSURING OF THE GROUND ALONG A  
LINE OF FAULTING AND CONSEQUENT DESTRUCTION OF HOUSES.

exerting a thrust upon the shores of the continents and islands which border it. Settling elsewhere is affecting the second belt of weakness and consequent mountain growth which extends east and west around the earth.

#### EARTH CRUST BEING BROKEN.

So much is hypothesis; for the rest of the explanation we are able to speak with more certainty. With the thrust, whatever its source, the rigid crust is being folded and broken along certain lines, especially in the two great zones previously described. At numerous points lava is squeezed out to the surface through the cracks in the growing mountains. In some cases, as in the Hawaiian Islands, this lava wells out without great disturbance or destruction. In others, where the vent has been temporarily closed or clogged, the lava is expelled with sufficient violence to blow it into fragments; it then rises high in the air in the form of volcanic ash, which, falling back upon the earth, settles near the vent, building up the cone, and, as in the case of the recent eruption of Vesuvius, settling in smaller quantities on the surrounding country. The expelling force, whether in the case of quietly flowing lava or violent ash explosions, is in all cases steam. The melted rocks contain a vast amount of water imprisoned in them under great pressure and at high temperature. When finally the force becomes sufficient, the expansive action of the steam expells the lava.

The history of Vesuvius clearly illustrates this point. Before the year '79 of the Christian era, the volcano was dormant and was not even mentioned as a volcano in Pliny's list, in his natural history. Its flanks were occupied

by villages and farms; and, as now, a fringe of towns encircled its base. Sixteen years before its outbreak, the renewal of activity was indicated by vigorous shaking of the earth. The pent-up lava was slowly forcing its way upward as premonition of the violent outbreak with which it would finally clear the closed-up vent by expelling the solidified lava that had accumulated there in the centuries of quiescence. An earthquake shock in the year 63 did so much damage to the buildings of Pompeii, that it had not been completely repaired when the final outburst of the volcano occurred. From the year 63 until 79, earthquakes were frequent, increasing in intensity and violence in the summer and fall of the year 79; then came the terrific outbreak, without question, the greatest that Vesuvius has experienced in historic times, which buried the city of Pompeii under a heavy burden of volcanic ash.

Since then Vesuvius has been almost continuously active, though with some periods of quiet which were always followed by violent eruptions, whose intensity was proportional to the length of the interval of quickening. Sometimes the vent is kept fairly clear and open for long periods, and then the eruptions have been of moderate intensity. At such times, the eruptions have been those of liquid lava, while in the periods of greatest violence ash eruptions have predominated. The eruption in 1906 included both ash and lava and is to be reckoned as one of the more moderate eruptions of Vesuvius's history, rather than as one of its most intense outbursts. Compared with one of the great eruptions of modern times, for example the volcano of Krakaton in the Straits of Sunda, in 1883, the last outburst of Vesuvius is really insignificant. f

## VOLCANOES AND EARTHQUAKE SHOCKS.

From what has already been said, it is evident that volcanic eruptions form one of the prime causes for earthquake shocks, and by people in general an earthquake is naturally supposed to be, of necessity, an indication of volcanic action. This, however, is far from the case; for, while earthquakes are common and necessary associates with vigorous volcanic eruptions, such shocks are local in the area which they disturb and are not ordinarily of the first magnitude. Earthquake shocks of this sort both precede and accompany volcanic eruptions, as is the case of Vesuvius, prior to the year 79; but their center of disturbance is always close by the volcano with which they are associated. It is true, of course, that the outbreak of a new volcano would give rise to earthquake shocks prior to the birth of the volcano. Such phenomena have been observed, but always in regions of already existing volcanic activity. Therefore, while it is not possible to state with absolute certainty that a volcanic cone is not about to be formed in or near San Francisco, there is every reason to doubt this. The nearest large volcanoes to the city are Lassen Peak and Mount Shasta in the northern part of the State, and these are, so far as we can tell, volcanoes whose life is ended.

Other volcanoes in Western United States have been in activity much more recently than Shasta, and, without question, some have been in eruption since the settlement of America. Mount St. Helens, in Washington, is reported on fairly good authority to have been in eruption before the middle of the last century; and even in California,

near Lassen Peak, there is a small volcano which has erupted in very recent times, probably not more than a century and a half ago. Trees which this eruption killed, and others which were flooded in a lake formed by the passage of a lava-flow across a small stream, are still standing. Therefore, this eruption cannot be of very ancient date. It need surprise no one to hear at any time of the renewal of volcanic activity in one or more of the cones in the mountains of Western United States. They have ceased eruption too recently to warrant the assumption that they are extinct. The evidence of Vesuvius, with its period of centuries of quiet, warns us not to believe that, because activity has ceased for the time, it is forever ended. At the same time, the absence of even dormant or extinct cones near San Francisco leaves us little reason to expect an outbreak of volcanic activity there, or any association whatsoever of the earthquake of April 18th, with volcanic conditions.

#### SLIPPING ROCKS ALONG FAULT-PLANES.

The second great cause for earthquake shocks is that of slipping of the rocks along planes of breaking, or fault-planes, when the strain to which the growing mountains are subjected becomes so great that the rocks must either break and slide over one another or slip along lines of previous fracture. This may be illustrated by reference to a specific instance, one which the writer had the good fortune to study in the summer of 1905. This instance is in Alaska, north of Sitka, and almost at the very base of Mount St. Elias. At this point a great inlet, known as



Yakutat Bay, extends into the very heart of the Mount St. Elias range, its total length being about seventy-five miles, and its walls being made of mountains rising from 3000 to 16,000 feet above sea-level. This part of Alaska has long been known to be a region of growing mountains, and earthquake shocks have been frequent along various points on the coast, in this respect resembling the condition in the Coast Ranges of California.

In September, 1899, an earthquake shock of great violence occurred in this inlet. A party of prospectors were camped at a point on the shores, and their account of the shaking of the ground is exceedingly vivid. They report that great masses of rock fell from the mountains; the neighboring glacier front was greatly fractured and fell into the fjord; and a huge water wave rushed up the inlet, washing high on its shores. The earthquake began on the 3rd of September and there were frequent shocks until the 20th, the two most violent occurring on the 10th and 15th of the month. On the former day, between 9 A. M. and 3 P. M., more than fifty distinct shocks culminated in one of exceptional vigor, during which the ground was so shaken that it was impossible to stand up.

Thirty-five miles from this point is an Indian village in which a number of white men also live. During the same period, and in the same succession of violence, shocks occurred of such alarming severity as to drive the inhabitants from their small wooden houses to tents on neighboring hills. During this same month, a violent earthquake visited Muir inlet and shook the earth so violently that the front of the Muir Glacier was broken into pieces and thrown into the inlet, forming such a mass of icebergs, that for

three or four years it was impossible for the steamer to take parties of tourists up to the glacier, as had been the custom each summer.

While studying the geology and physical geography of the Yakutat Bay inlet in the summer of 1905, my party had the opportunity of studying not only the effects of this earthquake, but also its cause. Owing to the fact that the region of greatest disturbance is not inhabited there was no destruction of life or property, but the mountain faces are scarred by huge avalanches which the violent shaking of the ground threw down. The effect of the great water wave is plainly visible along and near the shore line, especially where it is forest-covered. In such places up to an elevation of forty feet, the forest is completely destroyed and a mass of torn, twisted, overturned trees litters the surface in such a state of utter confusion as only a violent rush of water could produce.

We found that during this earthquake the mountain rocks enclosing the inlet had been bodily uplifted, in one place to an elevation of forty-seven feet. The evidence of this is of the clearest kind. Beaches, wave-cut cliffs and sea-caves now stand where they were hoisted high above the reach of the highest waves. On these elevated strands various marine animals are still clinging to the rocks, among them barnacles and mussel shells which, in 1899, were growing in the sea at levels varying from five to forty-seven feet below their present positions. Annual plants and young alder and willow bushes have since taken root on the elevated shores and there exists the anomaly of land plants growing where six years before the salt water stood.

A study of these elevated strands shows that they were not all upraised to the same elevation. In one part of the inlet the uplifted beaches stand five feet above the water, in another part seven to nine feet, and still another eight to ten feet; at one point seventeen to nineteen feet, and along a stretch of coast line three or four miles in length, at an elevation of from thirty-three to forty-seven feet above present high tide mark. These differences in elevation are the result of the fact that the upward movement of the mountains was along a series of fractures or fault-planes. The mountain, as a whole, was bodily uplifted in this section, but the mountain mass was moved higher in some parts than in others, being broken and raised as a series of tilted blocks bounded by fault-planes. In certain parts of the fjord we were able to actually see the fractured surface, but in other parts it was hidden beneath the waters of the inlet. Where the faulting crossed the land the surface is fissured and upraised in a series of little steps or terraces. In some instances these minor faults show a vertical movement of not less than three feet.

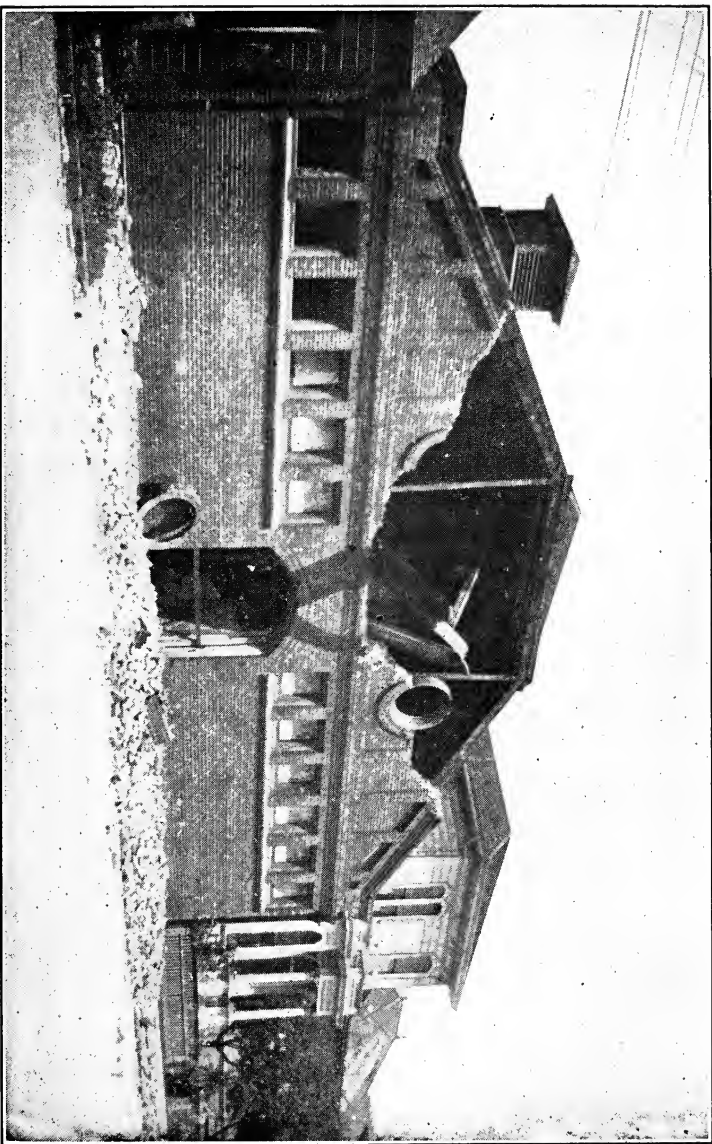
Such fracturing of the rocks must of necessity have sent a series of violent jars through the crust as the solid rocks slipped and ground over one another; and there can be no question but that the earthquake of 1899 was the direct result of this slipping. How far outside of this region the movement of the crust extended is not now known, but there is a little doubt but that it extended at least as far southward as the Muir inlet, one hundred and fifty miles distant.

## MOUNTAIN GROWTH IN PROGRESS.

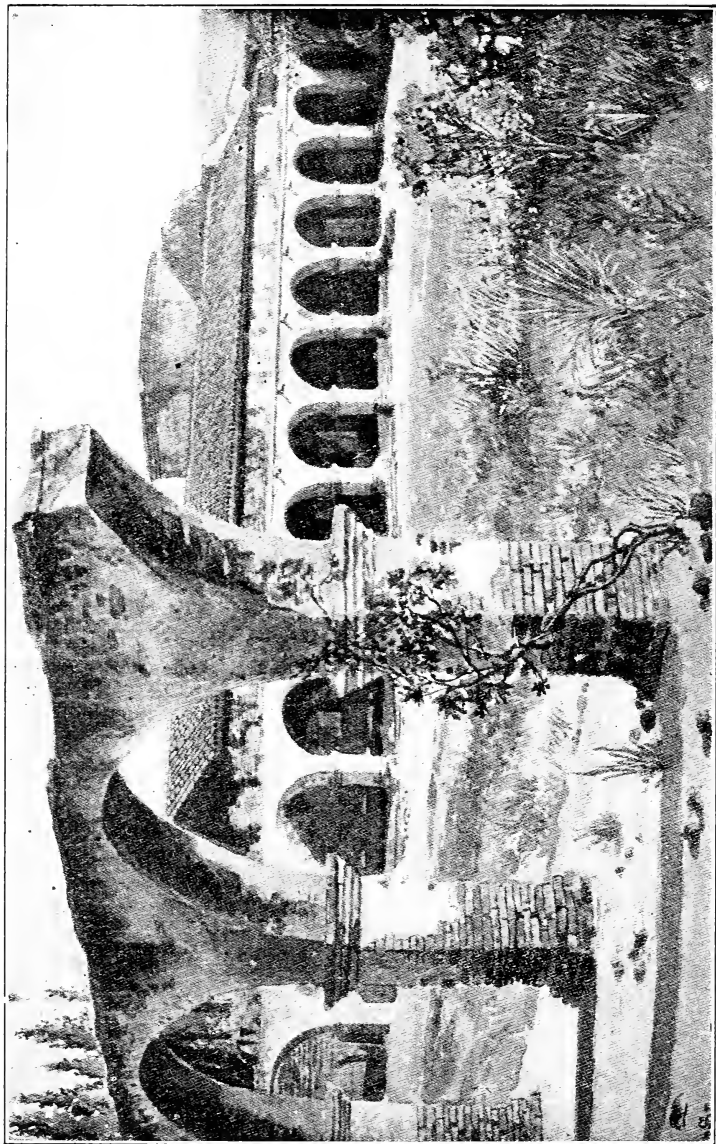
Here, then, is a case of actual mountain growth in progress. Its effects were felt by people on the ground; its nature is easily recognizable at the present time, owing to the fact that the coast line was uplifted with the mountains. It is, indeed, fortunate that there was not a San Francisco here.

At the time of writing this (April 21st), reports from the stricken region of California are too meager and upon too little scientific foundation to permit any definite statement as to the exact nature of the earthquake shock which has devastated San Francisco and other Californian cities. Enough is known, however, to warrant the prediction that when the facts are finally accumulated, it will be found that the shocks have resulted from a movement along one or more fault-lines extending parallel to the main axis of the Coast Ranges, that is, northwest and southeast. Geological study has clearly shown that faults are numerous in this part of the mountains. In fact, faults occur in the rocks immediately around the City of San Francisco. It is along some of these fault-lines that the earlier earthquake shocks have developed; and a geological map showing the location of destructive earthquakes in Western United States, since the year 1800, shows an unusual cluster of centers of earthquake disturbance in the region between Santa Rosa and Monterey, the very region most severely affected by the recent earthquake. San Francisco lies very near the center of this area.

In the earthquake of April 18th, the reports clearly show that the line of greatest destruction extends north-



EFFECT OF THE EARTHQUAKE ON A BRICK BUILDING



THE MISSION SAN JUAN, CAPISTRANO, DESTROYED BY THE EARTH-  
QUAKE OF DECEMBER 8th, 1812. FOUNDED NOVEMBER 1st, 1776.

west and southeast from at least as far south as Palo Alto, and probably farther, northward to Santa Rosa, and probably beyond. It is possible, that the slipping occurred along a single long fault-line, but it is much more probable that, when all the facts are known, it will be found that there was movement along more than one fault-plane.

#### FUTURE EARTHQUAKE SHOCKS.

The Coast Ranges have been put in a state of strain by the thrust which is causing them to rise. At several periods in the past century the strain has found relief by slipping, in consequence of which, in each case, an earthquake has passed through the crust. In the same way the strain which has been generated found relief by slipping on April 18th. There is every reason to believe that the relief of strain is but temporary. It is possible that further relief will be found necessary immediately, giving rise to a succession of shocks such as those which affected the Yakutat Bay region; but upon this point no definite prediction can be made, though it seems hardly probable that further notable slipping will occur again soon. Whether further relief is required at present or not, it may confidently be predicted that the strain will reach the breaking point at some future time, perhaps in a few years, possibly much longer, but come it must, and when it comes an earthquake shock will be generated as certainly as was the case on April 18th. Whether future shocks will ever equal or excel in violence and destructiveness, that of the present earthquake will depend upon the amount and rapidity of the slipping and the location of the fault-line. The fact

that movement along fault-lines near San Francisco has occurred not only in 1906, but at several periods in previous years, gives reason for the prediction that further movement will develop along these same lines, for once the rocks are broken and movements developed along them, further strain naturally finds relief along those older breaks in the earth's crust along which previous movements have occurred. San Francisco is situated on or near a danger line in the earth's crust and as long as the Coast Ranges continue to grow a city located there is constantly menaced by a natural operation of the geological processes of mountain growth.

The violence of an earthquake shock depends primarily upon the amount of movement into which the rocks are thrown. This movement consists of a series of vibrations, or waves, which pass with great rapidity through the crust, extending long distances before they finally die out. The intensity of the original jar in earthquakes, due to movements along fault-planes, depends upon two factors; first, the amount of movement along the fault-plane; secondly, the rate of this movement. If the slipping occurs slowly the shocks are moderate; if rapid, and at the same time with a movement through a considerable distance, a violent shock results. The succession of shocks through a series of hours or days, or in some case, even months, is due to successive slippings, the greatest and most rapid producing strong shocks and minor slips mere tremors.

#### **PLACE OF GREATEST VIOLENCE.**

The place of greatest violence in an earthquake is



normally the source, or *focus*, of the earthquake. The point at the surface directly above the focus is known as the *epicentrum*. If the faulting reaches the surface, as it did in the Yakutat earthquake, in the Japanese earthquake of 1891, and in many others, the breaking and fissuring of the surface layers naturally adds greatly to the destructiveness of the shock. Had San Francisco been situated in the most violently affected district of Yakutat Bay, for example, it is scarcely conceivable that any of its buildings could have withstood both the shaking of the ground and the fissuring and faulting of the surface. A city block, for example, under which the earth suddenly rises three feet on one side of a fault-plane would inevitably be completely demolished.

Whether any surface faulting and uplifting of shore-lines occurred in the San Francisco earthquake, as was the case in Yakutat Bay, has not been stated by the newspaper dispatches so far received. Both of these phenomena are to be expected although they are not absolutely necessary results of the movement, since it may all have occurred beneath the surface without affecting the soil. Certain reports of sunken tracks and telegraph lines may possibly owe their explanation to the surface manifestation of the subterranean movements.

Normally, the violence and destructiveness of an earthquake shock rapidly diminish away from the epicentrum. It is for this reason that Sacramento, lying well to one side of the main line of earth movement, was so slightly affected, although points much farther distant from San Francisco in a northwest-southeast line, and therefore, along the plane of faulting, were seriously damaged.

The waves or vibrations of earth movement continue far beyond the zone of destruction, as a wind wave generated on the ocean travels far beyond its place of development. In fact, in a vigorous earthquake, like that of San Francisco, the vibrations in the rock may pass completely through the earth; but at great distances from the center of disturbance they are so diminished in intensity that it requires the most delicate instruments to record them. Thus the seismographs at Washington, Baltimore, Albany, Vienna and Florence received a record of the San Francisco earthquake long before the news of the shock had reached these places by telegraph. A seismograph in any part of the earth would have obtained a record of this shock. It has been inferred by some that this indicates a great subterranean disturbance; but, in fact, it means merely the passage through the earth of waves which were generated at the center of earthquake disturbance. The passage of these waves is of the same character as the passage of vibrations through a steel rail or a board, to one end of which a blow has been struck.

While the violence and destructiveness of an earthquake shock normally diminish in all directions from the epicentrum, there are exceptional conditions which introduce variations both in the violence and destructiveness of the shocks. Of these only one need be considered in connection with the San Francisco earthquake. This is the influence of the nature of the rock through which the shock is passing. In the case of solid rock, the waves merely cause a vibration; and if a structure upon such a foundation is capable of withstanding the vibration it is not destroyed; but in loose earth there is added to the

vibration a shaking, loosening and settling of the unconsolidated materials. This not uncommonly gives rise to the undermining of the foundations of buildings and to their consequent collapse. In this connection it is noteworthy that the part of San Francisco most seriously devastated by the shaking of the ground was the lower portion nearer the water, where much land has been made by filling in the bay. It is to this fact probably that a large proportion of the original destruction of the city before the fire is due. Those structures which stood upon higher ground where hard rock comes up to or nearly to the surface escaped with very little destruction.

While this difference of position seems of itself to account for the difference in the destructive effect of the shock, it should be pointed out that another cause for greater destructiveness in the lower part of the city may also have been in operation. The indications at present are that the faulting which produced the shock occurred along a line passing either along the water edge or else out beyond it in the Bay of San Francisco. This would bring that part of the city which was most damaged by the shock nearer the epicentrum. Exactly how much relative effect is to be assigned to these two causes can be stated only after careful geological studies have been made.

It goes without saying that the destructiveness of an earthquake shock depends to a very large degree upon the nature as well as the position of the buildings. Hitherto violent earthquake shocks have occurred either in sparsely settled districts or else in the neighborhood of settlements where special earthquake architecture has been developed. The effect of a shock upon buildings of modern construc-

tion has not hitherto been observed. Without question the loftiness of the structures and the overhanging cornices added greatly to the destruction in the San Francisco earthquake. It is an interesting result of this shock that steel buildings have proved resistant to shaking. A study of the relation of modern architecture to resistance to earthquakes should be made in this instance; for it has a lesson of high importance to humanity, and the result of this lesson should be applied to the rebuilding of San Francisco.

#### TIDAL WAVES.

One terror which accompanies many violent earthquake shocks has, fortunately, not affected this stricken city. When movements of the crust occur under the ocean or along the coast line, uplifting bodies of land and displacing quantities of ocean water, a water-wave is commonly generated, as in the case of the earthquake of Yakutat Bay. A slight tidal wave is reported in connection with the San Francisco shock, but no greater than might have been generated by disturbances in the bay itself. The absence of such a wave in this instance is of the utmost importance; for with so much of a large city located but a few feet above sea-level, the destruction which an onrushing tidal wave would produce, could not be other than frightful. The wave which rushed up Yakutat Bay, devastating the forest to an elevation of forty feet, or that following the eruption of Krakatoa in 1883, which rose one hundred feet and killed over thirty-six thousand people, would, if it had reached the California coast, have left little of San Francisco below the level of the rush of water.

San Francisco will be rebuilt, far more magnificently than before, for the people have courage and energy; and geographical conditions demand that a great city shall stand on the Bay of San Francisco. It is to be hoped and expected that the new San Francisco will be built with a full realization of the danger of the situation which this terrible lesson has taught. With attention to architecture of all the new buildings, the destructiveness of even such a shock as that of April 18, can be greatly lessened, should one ever again visit the city; but far more important is protection from the fire which naturally follows the throwing down of a part of a city. With intelligent study of the problem and proper application of the results the new San Francisco should be safe from a return of such widespread devastation as that from which she is now suffering so terribly.

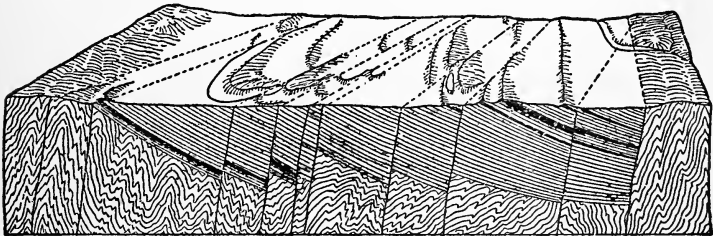
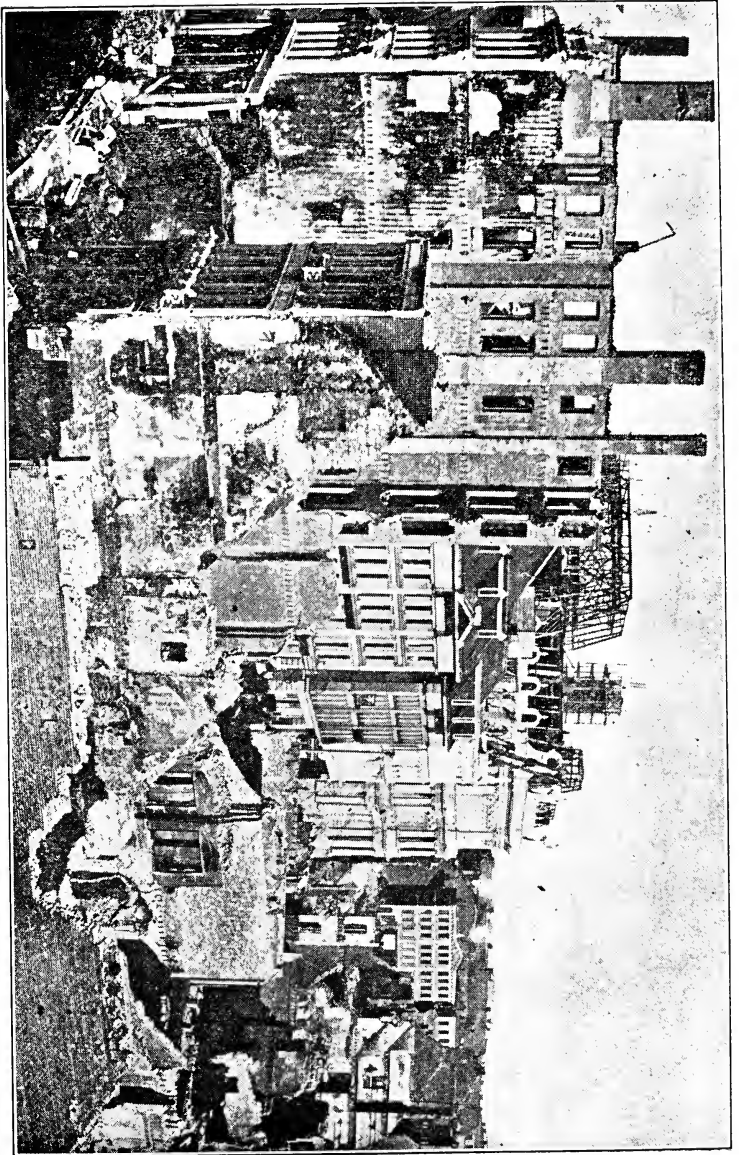
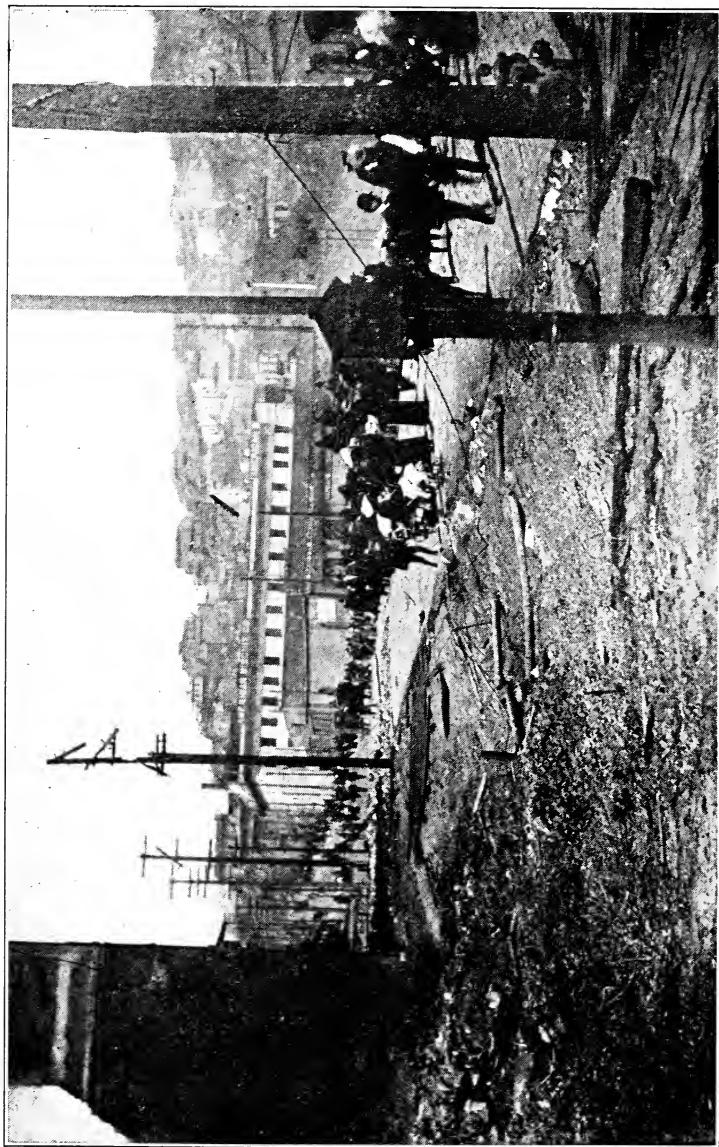


Diagram to illustrate faulting in mountains. The black layers were once continuous and the rocks have been broken and moved along the fault planes, The dotted lines show the surface extension of the faults.





BUILDINGS PARTLY DESTROYED BY EARTHQUAKE AND FIRE.



TELEGRAPH HILL, SAN FRANCISCO, ON APRIL 20th.



## THE SAN FRANCISCO DISASTER.

Early on the morning of April 18, 1906, there was flashed to the world the news that an earthquake shock, of tremendous force, had left havoc in San Francisco and a score of cities within a radius of fifty miles. Swift on the news of this disaster was sent broadcast the word that great fires, springing up in a score of isolated sections of the city, threatened to make annihilation of the havoc that had been wrought. Adding terror to terror was the startling declaration that the earthquake shock had completely incapacitated the water system of the city and that the great and efficient fire department was powerless to give battle to the flames. "The city is doomed," was the appalling word that sent a shudder around the world.

Thus was heralded what proved to be the greatest catastrophe ever visited upon a people in the history of the world. San Francisco, all of it that contributed to the prosperity and greatness of the city, was "doomed." Its people were to be called upon to pass through a trial by fire, not less awful in its extent, not less terrible in its details than that cataclysm which in the first century destroyed Pompeii and Herculaneum. The actual number of the dead was not greater than in the case of the twin towns submerged in the outbreak of Vesuvius, but the sum of human terror, human suffering, of tragedy, was to surpass the record of this catastrophe of old. Fire and flood, and the **destructive** might of earthquake **have** stalked through many a community in the Old World and the New. Flames have spread destruction; earthquakes have razed temples and homes, but the destroyer which laid San Francisco low amounted to these in one.

## NO TERROR LIKE THE EARTHQUAKE.

No terror equals that of the earthquake. There is no warning. Of a sudden, the earth seems to have drifted from its foundations in the universe; the human mind reels under the terror of planetary instability, the power of resistance is gone; the bravest and strongest become one with the weak and craven. Life, itself, for the moment loses its value, and the paralyzed faculties and instincts fail to govern mind and muscle, themselves lost to the power of obedience. In the crash of things men stand transfixed, mute, powerless, experiencing sensations that haunt dreams in dread shapes as long as life endures. This is the human scar in the train of the earthquake. Beside this, property losses pale into insignificance. In San Francisco, all were blended. This ordeal, alone, was enough to have left its story on the pages of history. But this was only the beginning. None will ever know just what share of the total havoc must be laid to the earthquake. It was no doubt, great. But to the stricken city there was not given time to right its shattered faculties. One terror crowded on the heels of another. Hardly have the shattered and torn remnants of thousands of great structures, churches, banks, hospitals and homes, settled in the disorder the destruction has wrought before the flames are crackling over what already is the bier of the valor and faith and hope of half a century.

Then followed four days of a struggle, never before equalled in the history of the world. It was not with the hope of saving their city that the people of San Francisco labored. It was with the scant hope of saving some little of it, some fragment to be the nucleus of a new city, which in the darkest hour of their trial every resident of the city

knew, had the great faith to know, would rise again in even greater splendor, for a future even more brilliant than its past had been. To bear the shock of nature in anarchy, with no human power to aid; to fight sweeping flames without the aid of fire's greatest foe; to work on and on without food or water; to hope when there seemed no basis for hope, to have faith where there could only be despair; this was the heroic part San Francisco was called upon to play. And it will go down to history that in a trial, more exceeding great than any people has been called upon to bear, San Francisco acquitted herself nobly. Something of the spirit of that Father of God from whom the city at the Golden Gate takes its name, must have brooded in the pillar of smoke by day, the pillar of fire by night, which veiled the long tragedy. And in the closing hours of the battle came still other terrors to try this people. Famine threatened. But San Francisco had faith in the great brotherhood of the cities of the States, dotting the broad reach of a continent that this terror would not long endure. Their faith was justified and the outpouring of aid from every section of America, will remain side by side with the heroism of San Francisco, a monument to the fraternity which unites the American people. And the terror of famine had hardly passed before the grim spectre of pestilence rose in the smoke and steam from the city's wreck; rose from the unburied, from the heaped havoc of the twin destroyers. Against this foe was waged a battle by warriors of science, as determined, as skilled as any ever waged. Thus, one after another, the city was besieged by the most terrible enemies against which humanity and civilization are called upon to war. There were four days, every one of which burned itself into the minds and hearts of every one who shared the awful ordeal. When finally the fire had burned

itself out, three-quarters of what had been San Francisco lay in ruins; **one** thousand persons had lost their lives; five thousand had suffered wounds; three hundred thousand were homeless; property valued at \$300,000,000 had been destroyed. These are the tangible results. Every man, everywhere, who has had his day of ordeal will know that the results which may be put in figures are always the least of the results. But they furnish basis of comparison with other great tragedies of history and serve to demonstrate how without precedent was this disaster.

#### WHEN THE FIRST SHOCK CAME.

It was 5.13 o'clock on the morning of April 18, that the first violent shock of the earthquake occurred. The territory immediately affected covers a fifth of the State of California. In addition to the destruction of San Francisco, which is to be described in detail, the following communities were affected:

**PALO ALTO**—Leland Stanford, Jr., University practically destroyed; **every building** seriously injured, few standing; loss, many millions of dollars; several lives lost.

**AGNEWS**—Insane asylum wrecked by quake and subsequently burned; many inmates killed, others roaming around country.

**SALINAS**—Spreckels' sugar factory destroyed; loss \$1,500,000; High School building, Elks hall, Masonic temple, armory, city hall, K. of P. building, Odd Fellows' building, many business houses completely destroyed.

**SAN JOSE**—Many buildings wrecked; twenty persons killed.

**NAPA**—Many buildings shattered; no loss of life reported; property loss, \$300,000.

STOCKTON—Santa Fe bridge over San Joaquin river settled several inches.

VALEJO—Some damage to property; loss, \$10,000; no lives lost.

REDWOOD CITY—Courthouse and other buildings collapsed.

SACRAMENTO—Buildings rocked like cradles; postoffice and few brick buildings damaged.

SUISUN—Mile and half of railroad track sunk three to six feet; loaded passenger train nearly engulfed.

SANTA ROSA—Courthouse reported demolished and number of persons killed; city in flames; loss, \$1,000,000.

WATSONVILLE—Moreland Academy destroyed by fire; several buildings collapsed.

MONTEREY—Chimney fell through roof of Del Monte hotel, killing a bride and groom and a hotel employe.

HOLLISTER—Grangers' union warehouse destroyed; woman killed, her husband went insane.

In connection with the destruction and loss of life at every one of these centers there is a story of horror. And any of them, alone, would add a chapter to the literature of the destruction that has followed in the wake of earthquakes. In **the appalling** cataclysm of San Francisco, however, these are submerged. They are incidents in the total of tragedy.

#### THOUSANDS IN PERIL OF DEATH.

The shock had found most of San Francisco asleep. Hundreds of thousands, after a moment of confused and paralyzing terror at the heavings of the earth, had plunged into the streets. Five minutes after the first convulsion there came a second, not so severe but violent enough to hurl into the streets, now thronged with people, roofs, walls, whole buildings, that had only been left tottering by the

first shock. This was the moment when human life stood in greatest peril. How many were crushed under the avalanches of walls in every section of the city will never be known. Many found a pyre where they had met their doom. There may have been hundreds of them, there may have been thousands. Nor will it ever be known how many were injured. The helpless lay where they had been stricken, impaled, or buried. Hundreds of these were rescued before the flames reached them. The hospitals received several thousands, but to keep records in the overwhelming rush of work was out of the question. Definite details would have been obtainable were this all of the disaster, but the chaos of the four days, when the tempest of destruction was at its height, removed any possibility of this. Enough that upward of 1,000 persons lost their lives and hundreds on hundreds more suffered injury. In the swift succession of appalling events there was hardly time to remember wounds, and hundreds, even seriously hurt, went for hours and even days unmindful of them.

So many have been the forms of destruction that it will always be an open question just what part in the general havoc was played by the earthquake. Hundreds of structures, even thousands, were damaged in some degree. For the great majority repairs of small cost would no doubt have restored them. Many buildings of cheaper construction were reduced to heaps of debris. In the finer sections of the city the damage was extensive. Chimneys, sections of walls, cornices, falling from great heights on smaller buildings probably did more of the damage than the actual shock of the earthquake. The damage to the modern structures, the skyscrapers, of which the city boasted a large number, will be the subject of the chief debate. The truth is, very probably that while there was the appearance of vast

havoc, that structurally these buildings, in many instances, were not seriously injured and that repairs to external injuries would have restored them. The conclusion will probably be drawn, ultimately, that had there been only the earthquake, San Francisco, on counting the cost, had found it far within the calculations of men still under the spell of terror. The losses would have gone into the millions, no doubt, and the story had been a notable one, worthy a place among the great disasters, but not one to make the city unique for all time.

#### A BROOD OF DESTROYERS.

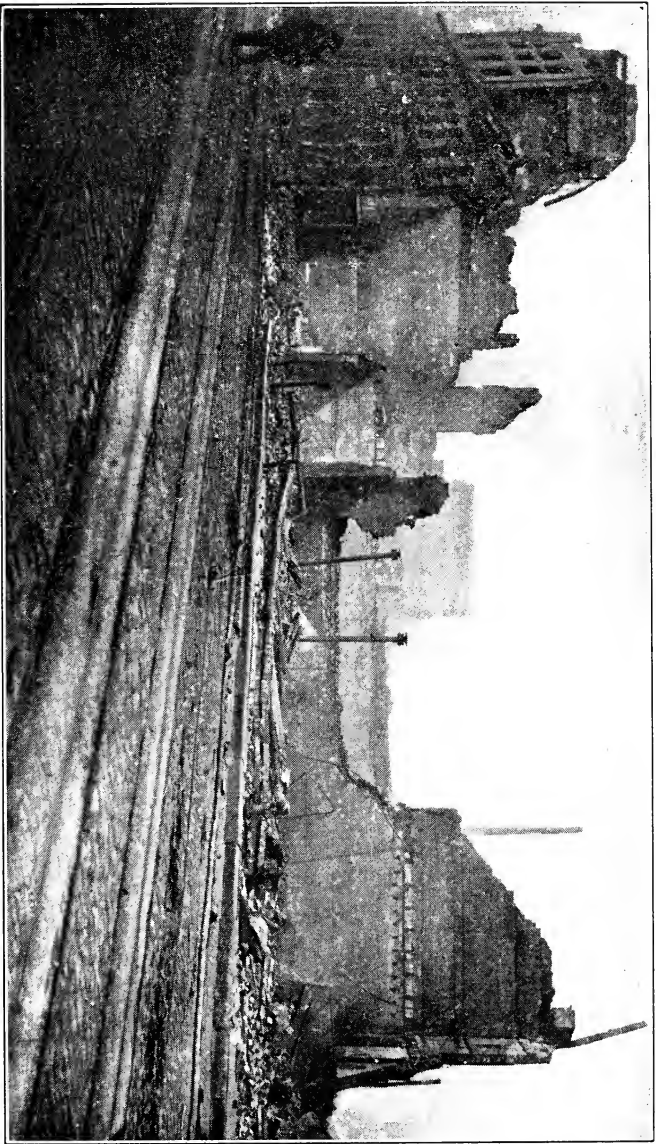
It was the brood of destroyers, born of the earthquake, that laid San Francisco low. Fire was to have been expected. The firemen of the city went confidently to work to give battle. But the whole appalling truth of peril was not known until it was discovered that the earthquake convulsions had wrecked the great water mains of the city and that in the face of twenty fires there was no means to wage war on them. Just at that moment, when streets were crowded and the second shock came, human life faced the crowning crisis; so the city itself stood face to face with its greatest peril at this moment. It was a crisis that spelled destruction. It was told in that single word, "doomed," that was sent broadcast. From that moment event followed event in logical order until three-fourths of San Francisco lay a seething, charred **heap** of ashes.

The story divides itself naturally into periods of days. Wednesday morning, April 18, marked the beginning. The events, the hopes and fears, of Wednesday form a chapter by themselves. There was a night of terror. Then Thurs-

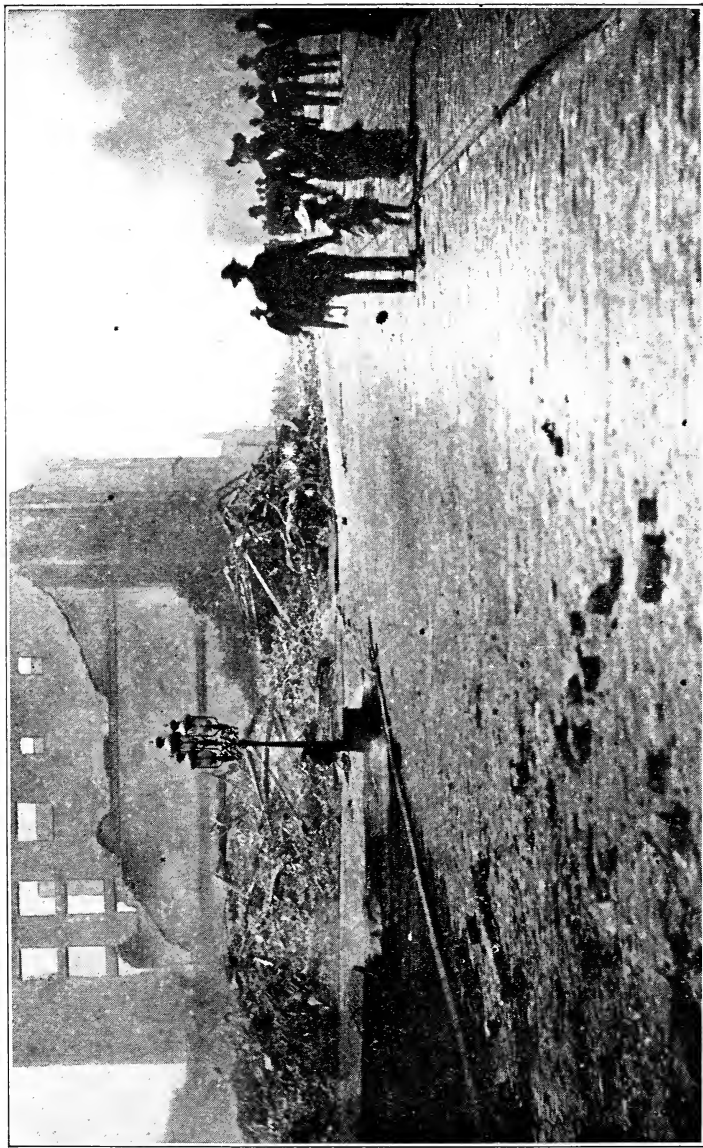
day dawned on the destruction already wrought. The earthquake was now a thing of the past. But the monster of flame was still eating at the heart of the city; firemen and troops were still engaged in the unequal struggle; an army of homeless ones demanded shelter; there was no water and little food; the dead were unburied; the injured being dragged from point to point; a throng of terror-mad people were battling for escape; these and other awful facts confronted the authorities on this second day and its story is a second awful chapter. Another night of suffering and terror and Friday dawned. Still the fire, spreading destruction; still the hunger and thirst; still the homeless, still the problems of the day before, now increased an hundred-fold. So Friday, with its struggle to save; its hope against hope and its faith in the face of the rapidly vanishing city, is a new chapter in the unfolding of the tragedy. Now organization is succeeding chaos, the outside world has been heard from; men have regained their faculties; the need of the hour has been methodically determined: "What of to-morrow?" rivals "What of to-day?" in men's minds. The worst has been reached, perhaps past, is the hope when Friday's chapter comes to an end. Then dawns Saturday. It brings fresh problems, a new aspect; a new chapter. Now comes the glad news that the fire has reached its utmost boundary. Now comes the time of recapitulation. Not "What is going?" but "What is left to us?" is the question on men's lips. And thus Saturday adds its score to the whole.

Each day, moreover, is a day of detailed things. Such disasters defy generalities. Step by step the path of the flame must be followed, its story the story of the last





MARKET STREET, SAN FRANCISCO, AFTER THE FIRE.



A MILLION DOLLAR STRUCTURE IN RUINS. MARKET STREET.  
SAN FRANCISCO.

building that crumbled in its path. The story, from the human point of view, is the story of the struggle for life of the individual. Here, also, generalities can carry little idea of the sum of the human suffering involved. So of every aspect of the catastrophe. Each is the sum of infinite incidents and it is only in the assembling of these that the reader may hope to get a near view of the events recorded, to catch in the sum of the minute development, scene, by scene, as it were, of a great tragedy the plot that underlies the whole. This we shall attempt to do.

#### AN "EARTHQUAKE CITY."

Although San Francisco has always been known as an "earthquake town" frequency of shocks rather than violence has been characteristic of its seismic history.

There was a violent shock in 1856, when the city was only a mining town of small frame buildings. Several shanties were overthrown and a few persons killed by falling walls and chimneys. Next in violence was the shock of 1872, which cracked the walls of some of the public buildings and caused a panic. There was no great loss of life. In April, 1898, just before midnight, there was a lively shake-up which caused the tall buildings to shake like the snapping of a whip and drove the tourists out of the hotels into the streets in their night clothes. Three or four old houses fell, and the Benicia navy yard, which is on made ground across the bay, was damaged to the extent of about \$100,000.

These were the heaviest shocks. On the other hand, light shocks have been frequent. Probably the sensible quakes have averaged three or four a year. These are

usually tremblings lasting from ten seconds to a minute and just heavy enough to wake light sleepers or to shake dishes about on the shelves. Tourists and newcomers are generally alarmed by these phenomena, but old Californians have learned to take them philosophically. To one who is not afraid of them, the sensation of one of these little tremblers is rather pleasant than otherwise.

#### HAVE ALWAYS FEARED DISASTER.

Yet the fear of a great earthquake disaster has always been over San Francisco. It has accounted in great degree for the peculiar architecture of the place. It was only in 1890 that any one ventured to build a high structure, and the inhabitants have been shy of brick and stone. The houses and the business blocks, to some extent, are of wood—mainly California redwood. Brick residences are not common.

With the steady trade winds which prevail there at all seasons of the year the city should have been wiped out by a great conflagration long ago, and would have been but for the peculiar quality of California redwood, which smolders in a fire and refuses to break into a bright and energetic blaze. Given a good water supply the fires are such that they are easily handled by the fire department. In fact, there has never been before this what might be called a general conflagration in San Francisco.

To understand this disaster it is necessary to consider the peculiar physical characteristics of the land upon which San Francisco is built. The original site was a bunch of high and abrupt hills ending in a peninsula, whose furthest

reach forms one side of the Golden Gate, the entrance to San Francisco Bay. The greater part of the city proper is on the inner side of the peninsula, facing on the bay and not on the Pacific Ocean. The city has been growing out toward the ocean, however; and Golden Gate Park, which starts as a broad ribbon of land at about the centre of the town, has reached an ocean frontage. The city now has a population of more than 400,000.

The four or five high hills were appropriated early in the life of the city as a residence district; and with the exception of Telegraph Hill, at one corner of the city, they hold the homes of the wealthy and well to do. The business district was set on the low lands in the clefts between the hills, and, of course, as close to the wharf-room on the bay as possible.

Such land being valuable, this district has been gradually filled in and extended for fifty years. "When the water came up to Montgomery street" is a San Francisco phrase describing the early days. Now there are ten blocks of business streets between Montgomery street and the water front. Here lies the warehouse and wholesale district.

The heart of San Francisco is "Newspaper Corners," only a block inland from Montgomery street, and therefore verging on the old waterfront and the made lands. Here, on four corners, stood the *Chronicle* building, eleven stories, and the first high building in San Francisco; the *Call* building, twenty stories, and the tallest structure in the city; the *Examiner* building, eight stories, and the new Mutual Bank building, twelve stories.

Just on the edge of the made land stood the Palace

Hotel, not a high building, but covering a block of ground and one of the largest structures in the city. Across from it was the Crocker building, ten stories, and the smaller Hobart building, in which the Postal Telegraph Company was housed. At the centre of the square formed by the newspaper buildings stood the fountain presented by the actress Lotta to the city.

#### FIRST BIG BUILDING IN 1890.

As has been said, the fear of what might happen in an earthquake, combined with the scarcity of nearby quarries and brick-yards, kept San Francisco people from building with a show of permanence. The first to break the tradition was M. H. DeYoung, who put up the eleven story *Chronicle* building in 1890. This was in the early days of skyscraper construction, and the framework of the *Chronicle* building was not of steel but of wrought iron, while the shell was of brick.

The building stood, weathered a few small earthquakes and had nothing happen to it. San Franciscans took heart and began to experiment with tall buildings. In 1894, John D. Spreckels put up the *Call* building, noted as one of the few really beautiful skyscrapers in the country. This stood out of the city like a tower as viewed from the hills and was the most conspicuous feature on the landscape of San Francisco. The Crocker Building, the Emporium Building, the Wells Fargo Building, the new Baldwin Building and half a dozen others followed.

In 1903, the St. Francis Hotel, a skyscraper, was

erected on Union Square. This is a little way out of the low era of made ground and original waterfront and had every reason to come unscathed out of an earthquake. In 1905, the Fairmount Hotel, built from the Fair fortune, was put up on the edge of the highest hill in the city, and the new Merchants' Exchange Building was completed on California street. In fact, building mainly of large structures has been going forward as fast as the limitations imposed by the unions which have ridden the city would permit.

#### THE BUSINESS DISTRICT.

The business district lies all along Market street or north of it. Market street, even after it gets past the area of made land, is in a depression. Almost all the district south of Market street is on low lands, originally tide flats. Here are the dwellings of the poor, corresponding to the tenement district of New York, except that the poor of San Francisco are housed not in tall tenement buildings, but in frame houses, often of flimsy construction.

Experience with earthquakes has shown that low lands, and especially made lands, suffer the most. That seems to have been the case in this earthquake. It ripped things up in the wholesale district of made lands, devastated all Market street and tumbled about the tenement district.

It is highly probable that the loss of life was almost entirely confined to this tenement district. It is hardly necessary to add that the time of the disaster was its only mercy. The peculiar local conditions, which have packed most of the business traffic in one street, have made Market

street one of the busiest thoroughfares in the United States. In business hours it is far more thickly congested than any street in New York. The falling strippings of walls alone would have killed hundreds and thousands of people.

Just across the Bay from San Francisco, and on the eastern shore, lie the suburbs of Oakland, Alameda and Berkeley. Oakland, a city of something more than 70,000 inhabitants, is to San Francisco what Brooklyn is to New York, except that it is further away—about six miles by ferry. Here are all the terminals of the direct overland lines, and all passengers, except those coming by the Southern routes, take ferry at Oakland for San Francisco. Further along the bay shore and adjacent to Oakland is Alameda, a residence town on very low land. Hitherto Alameda has suffered from the slight earthquakes in that region more than San Francisco. On the other side of Oakland, eastward of it on the overland routes, is the college town of Berkeley, the site of the University of California. Carrying out roughly the parallel to New York, Oakland would represent Brooklyn, Alameda, Flatbush, and Berkeley, Long Island City.

#### WHY WATER MAINS FAILED.

Although the water supply of San Francisco was ample, and was helped out for fire purposes by a system of salt water mains, the system was made to be the prey of earthquakes. The greater part of the supply came from the Spring Valley lakes, some distance south of the city on the peninsula. The chief main



ran along the backbone of the peninsula for some distance, but upon approaching the city it took an abrupt turn to the east and ran along the made lands until it reached the business district. From that point it was pumped to reservoirs on the crests of the city hills, where it got the fall to supply the residence district. That disturbance of the made lands, which, of course, broke the water mains, cut off at once nearly the whole supply of the city. That possibility had not been foreseen in planning the San Francisco water mains.

The San Francisco newspapers never mentioned the possibility of a disastrous earthquake, but the subject was always in the public mind. A common subject of discussion in San Francisco was the effect of a shake upon the new tall buildings. Almost all the architects declared that they stood a vastly better chance than low structures of brick and stone or ordinary frame buildings. The inter-

locking steel structures, they declared, would sway and give; the worst that could be expected would be the bombardment of the streets caused by their shaking off their shells. In this opinion many made an exception of the *Chronicle* building, which was built on a rigid iron frame. As a matter of fact, the *Chronicle* building came out of it well, so far as the earthquake was concerned.

#### BEDLAM FOLLOWS EARTHQUAKE.

This, then, was the city on which the great disaster fell. No pen ever will adequately describe the bedlam of the first memorable moments after the first of the series

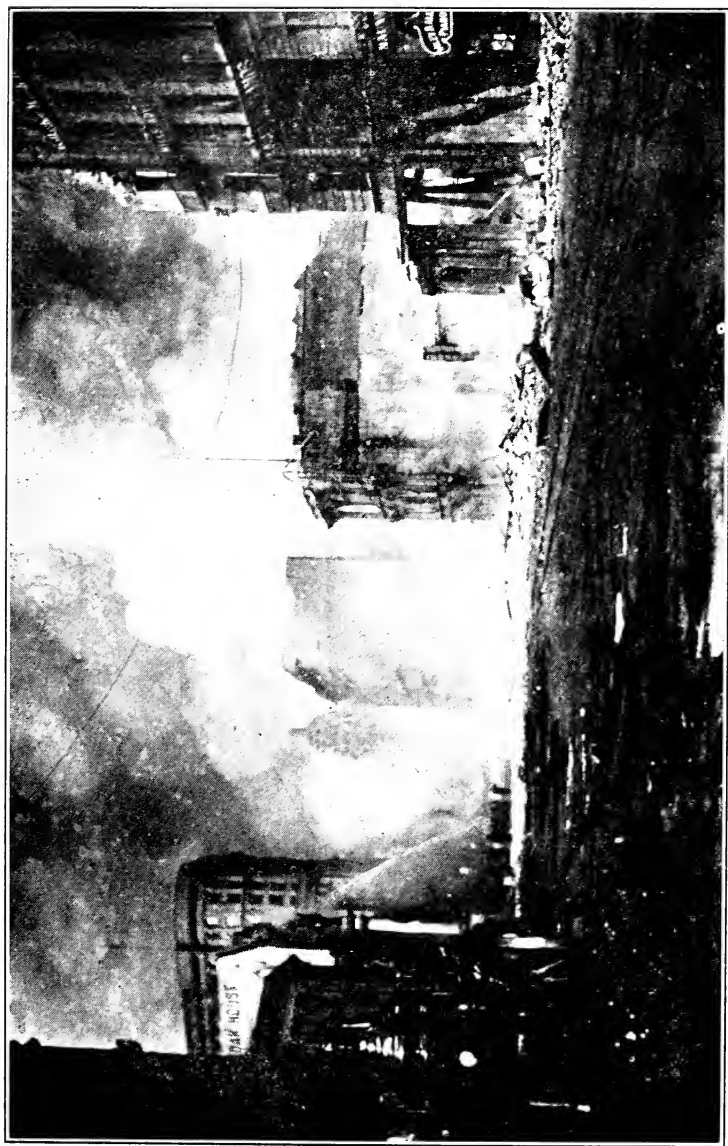
of shocks. No pen will ever describe the spread of terror throughout the city, through the first awful day, following the early morning disaster from earthquake shock.

The first shock came while still the mighty city lay deep in slumber, weary with the revelries and pleasures of the night before. In the quiet homes, in the crowded hotels, men had not yet awakened to the strifes and endeavors of the new-dawned day. The stars had but waned, and the morn was just breaking through the mists and fogs that hung in gray curtains across the waters of the placid bay and over the waiting hills. In through the Golden Gate were blowing the first piping winds with the greeting of the sea.

Then came the rumble of deep thunder from the mighty bowels of the startled earth. The city shook like an aspen leaf, and her gray highways suddenly cracked and split as though the batteries of Satan and hell had been opened against them from underneath. Along shore the wharves warped and creaked, and the rakish shacks of the water front fell like stacks of cards. The hills of Sausalito and Piedmont, the Oakland heights and the dim bluffs of San Jose rocked like forests in the wind. The clock in the tall tower of the Ferry Building stopped as though the spirit of a demi-god were passing. The majestic structures of steel and stone that reared their domes against the sky along Market street, and up and down Montgomery and the other splendid thoroughfares that line and intersect the mart-crowded town, swayed and swung like pendulums. Then the batteries from below broke forth again,



**VIEW ON MARKET STREET, SAN FRANCISCO, SHOWING  
CHRONICLE BUILDING AND SPRECKELS BUILDING**



SAN FRANCISCO AFTER THE FIRE—LOOKING DOWN MARKET STREET.

and still again. Shock followed shock, as though the enemy that lay masked beneath the buttresses of the earth were determined to annihilate the city by storm.

#### AWAKE TO DEATH AND DOOM.

Rude was the awakening from the slumber-bound night—rude and cruel with messages of death and doom. Into the rent and reeling streets men, women and children rushed, half-clothed, with blanched faces and white and speechless lips. The mighty terror that they had sometimes dreaded and had often laughed at was face to face with them at last. Their black day of trouble had come, indeed.

There is no witness of this day's story whose tongue or pen can describe the wreck and ruin, the death, the doom, the despair and suffering that lay on every hand. All through the horror-stricken hours the living hunted for the dead. Deeds of human bravery, countless and beyond praise, were performed. The police, the firemen and private citizens vied with one another in rendering that service which nothing can repay. Heroes without number leaped into the jaws of death to save their fellow human beings, and in more than one instance sacrificed their lives in the vain effort to save others. Death and sorrow leveled all differences, social or otherwise. Saint and sinner huddled alike in the gloom of this sad night; the same grief tugging at the heart of each. The holy men of the tabernacles and the ungodly denizens of the shadows walked side by side, the same livid fear blanching their lips. Lady of quality

and woman of the slums, the vestal virgin and the painted harridan wept tears together.

Fair and beautiful, from her thrice seven hills, the city of St. Francis had looked down upon the sunset sea. Now she lay a blackened, ruined thing, the pity of the world. Her shining streets, buttressed with towering structures of granite and marble and brick, hooped with steel and bolted with iron, are riven as though by the hand of devastating demons. Generation after generation she builded with infinite care and tireless patience until the sons of the four winds came to look upon her loveliness and the wonder of her beauty. But in the space of a few short hours she has been undone. There stands no keeper at the Golden Gate. From tower and dome and window there gleam no lamps of welcome. No song creeps out upon the mirroring waters. Where life was, there now is death. The dead are at peace, but the living stand with sleepless eyes waiting for the dreaded dawn of another day.

#### **BUSINESS SECTION STRICKEN.**

The successive earthquake shocks fell heaviest on the great business section of the city. These include the waterfront and several square miles of territory. It is made ground and to the instability resulting from this fact is to be attributed the tremendous effect of the repeated convulsions of the earth. The whole section had been built up with imposing business edifices, thickly settled, reaching from North Beach to far south of Market street. To-day there is only ruin.

Included in this area is the new ferry building, one

of the most important structures on the Pacific Coast; the well-known Palace and Grand Hotels, and others of importance; the Merchants' Exchange, the famous Stock Exchange; great wholesale houses whose firm names are known throughout the country; the Nevada Bank, Western Union and Postal telegraph offices, the Crocker building, and, in close proximity, the Chronicle, the Examiner and sixteen-story Call newspaper buildings.

Following the first shock, almost immediately came a heavier one, and then, swaying and prostrating great buildings came the third shock, which was the cause of the chief destruction. It seemed that the city was practically destroyed. From the ruins of the buildings shaken down by the five quakes that followed in such close succession, arose great bursts of flames which swept inward from the bay. Water mains had been destroyed by the quakes, rendering the fire department engines, such as could be dragged from fallen walls, almost useless.

The police department was put to work early and with the assistance of Federal troops sent from the Presidio military reservation on the outskirts of the city by General Funston, succeeded in enforcing some measure of order in the panic which followed the disaster.

From lodging-houses that had fallen, and from other quarters, poured streams of naked or half-clothed people, dazed, hysterical or frenzied, not knowing which way to turn in the great horror of devastation and still further impending peril which had seized the city.

Husbands were separated from wives and mothers from children.

Business men trembled with the thoughts of the losses which had befallen them and over all palled the overmastering sense that the danger might not be ended.

#### SEARCHED RUINS FOR HUMAN VICTIMS.

The firemen, with the assistance of the volunteers permitted to work by the troops and the police, vigorously endeavored to discover human beings buried under the masses of stone, brick, mortar and wood and to snatch the corpses and such persons as might be living from the rapidly increasing volume of flame.

At 9.45 A. M. the city was a mass of fire from Montgomery street to the water's edge. The fire fighters in their efforts to stay the progress of the flames, used dynamite freely in destroying structures which might have material for the pitiless element to fasten upon.

South of Market street was a sea of roaring red destruction from which came reports of exploding gas tanks.

The city morgue was early filled and Mechanics' Pavilion, across from the City Hall, was turned into a mammoth receptacle for the bodies of the dead, and as a resting place for the injured.

Before 10 A. M. three hundred dead had been taken out, and this number grew and grew until the space reserved could hold no more. All the physicians, surgeons and nurses in the city, who had escaped alive from the terrible cataclysm, hastened to offer their assistance in the service of those who were in great need of help.

Meantime, the flames spread, and new reports of death and demolition poured in upon the nearly exhausted workers.





VIEW OF SAN FRANCISCO DURING THE CONFLAGRATION.

“Half of the city already is destroyed,” was the cry “and the fire is spreading.”

From the power of the roaring furnace of flame, the thunder of exploding gas and other destructive agencies, including dynamite, it was difficult to distinguish the forces, and when a report went out, at 2.45 P. M., that there had been another earthquake shock, some thought it might be the trembling of the earth consequent upon vibrations of expanding gases and thuds of fallen weights of material.

#### SWEEP OF DESTROYING ANGEL.

With water mains broken, fire department powerless, and flames spreading; with morgues and hospitals filled to overflowing; with electric light and power wires down, and telephone and telegraph communication cut off; with railroads crippled so that rolling stock could not be moved and relief trains barred from entrance; with many of the largest buildings prostrate and others rocking, threatening to fall at any moment; and with panic rampant, the condition of San Francisco was one of almost benumbing horror.

The first efforts to secure some faint conception of the extent of the terrible catastrophe produced pitiable results. About all that could be told was that several shocks of earthquake, variously estimated at from three to five or more, had rent the city; that hundreds of people were killed and injured and that a great fire was raging on the South Side, and another forcing its resistless way up Market street from the water front sweeping buildings in its way.

On the right side of Market street, going from the ferry, was the splendid plant of the Postal Telegraph Company. Following the first outbreak, the operators of this company heroically remained at their posts and gave the first tidings of San Francisco's overwhelming calamity to the world.

Subsequently, the company's power plant was put out of commission by the crush of falling bricks. At that time, half the wholesale district was burning, and there was no water.

The third shock startled the city at 8.45 A. M. At that time telegraph and telephone communication was virtually at an end. The wind was blowing a gale and the Palace Hotel, opposite the Postal, was in flames. From the water front to Montgomery street was a glare of flame, every moment increasing the destruction and the horror. The massive and imposing caravansary which has sheltered some of the world's most famous travelers, was rapidly emptied of guests and employees.

At least fifty large blocks lay in ruins at 9.30 A. M., and the damage to others could not be estimated.

The water front was a scene of entire wreck and destruction.

#### STREETS BECOME IMPASSABLE.

Horrors accumulated. The streets were impassable on account of the great masses of fallen and burned structures.

In some of the principal streets great fissures appeared.

New fires broke out in different parts of the city, and it seemed that if the wind did not change the entire metropolis must go.

The Western Union Building and Associated Press headquarters at 302 Montgomery street were demolished and hasty quarters were established elsewhere. The Sunset and long distance telephone services were soon out of business.

It was learned that there was a quake down the coast, possibly beyond San Luis Obispo; that San Jose was destroyed; and that Salinas, Watsonville and other towns in that region had suffered exceedingly; that Napa was partly destroyed and that the damage and suffering had extended eastward into Nevada and even beyond.

Panic reigned. Those who could do so tore madly through devious courses to the blackened, smoking water front, hoping to escape by ferryboats or other craft across the bay. Street cars were out of commission and people rushed madly along as best they might.

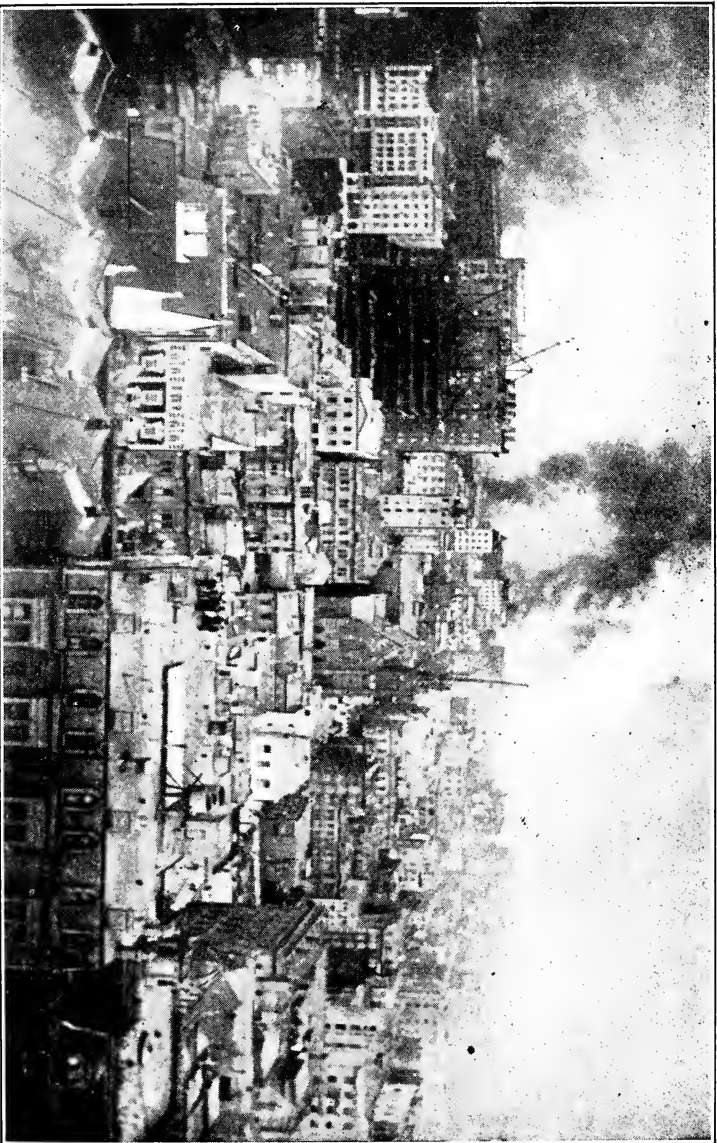
Everything was gone on Market street from First to the ferry on both sides of the street, although the Palace and Grand Hotels resisted the sweep of the flames longer than other structures.

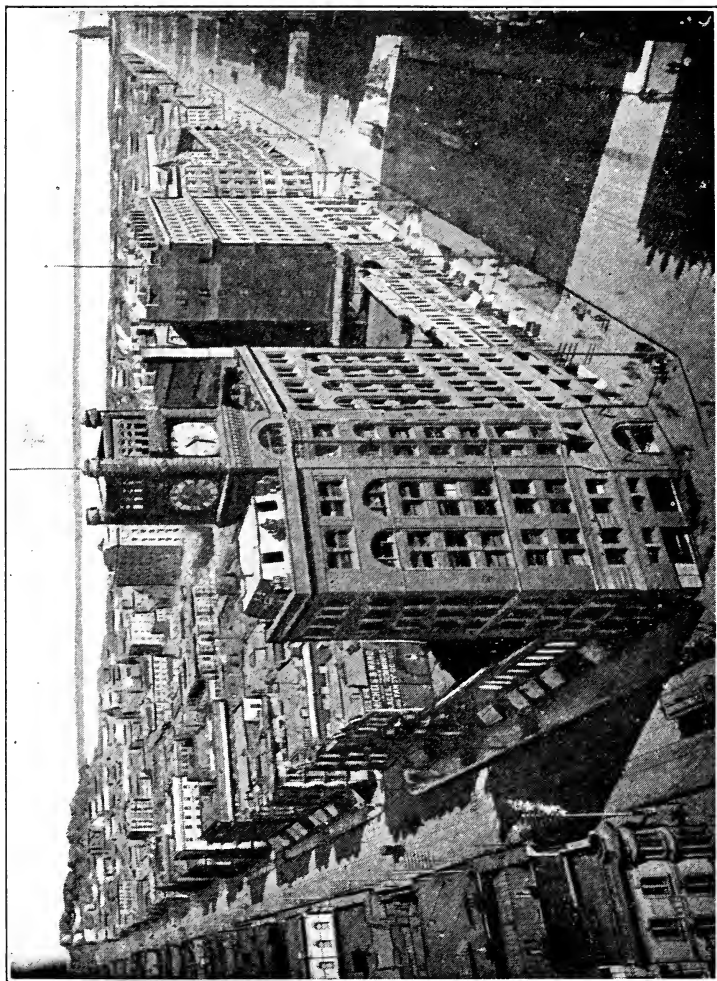
From Sixth street, on the west, to the water front, on the east, south of Market street roared the destructive element, and the Jessie street side of the Palace Hotel caught fire.

From Market street to Washington and from Sansome to the water front was another mass of flame to the northward.

The sweep of the winds carried burning brands into the outlying district and soon a block on Mission street, between Twenty-first and Twenty-second streets, was ablaze. This is several miles from the business section,

SAN FRANCISCO, LOOKING OVER THE CITY DURING THE GREAT FIRE.





THE CHRONICLE BUILDING, KEARNEY AND MARTIN STREETS, SAN FRANCISCO

and threatened with destruction should the fire continue to spread, the southern residence section of the city.

With the disaster only a few hours old, thousands of people were homeless and destitute, and all day long streams of people fled from the stricken districts to places of safety.

The furious fires raged all day, and the fire department was powerless to do anything except to destroy the buildings threatened. All day long explosions shook the city, and added to the terror of the inhabitants.

All efforts to prevent the fire from reaching the Palace and Grand Hotels were unsuccessful, and both were completely destroyed, together with all their contents.

All of San Francisco's best playhouses, including the Majestic, Columbia, Orpheum and Grand Opera House were destroyed. The earthquake demolished them for all practical purposes, and the fire completed the work of destruction.

The handsome Rialto and Casserly Buildings were burned to the ground, as was everything in that district.

#### MECHANICS' PAVILION MORGUE.

The scene at the Mechanics' Pavilion during the early hours of the morning and up until noon when all the injured and dead were removed because of the threatened destruction of the building by fire, was one of indescribable sadness. Sisters, brothers, wives and sweethearts searched early for some missing dear ones. Thousands of persons hurriedly went through the building inspecting the cots on which the sufferers lay, in the hope that they would find some loved one that was missing.

The dead were placed in one portion of the building

and the remainder was devoted to hospital purposes. After the fire forced the nurses and physicians to desert the building, the eager crowds followed them to the Presidio and the Children's Hospital, where they renewed their search for missing relatives.

More than seven hundred and fifty persons who were seriously injured by the earthquake and the fire had been treated at the various hospitals throughout the city by Wednesday afternoon.

The front of the Bailey and Lacist Building on Clay street, near Montgomery, fell in killing three men.

Captain Gleason of the Police Department was seriously injured at noon by the falling of tiling.

The stereotypers and pressmen of the Examiner and the Call, as soon as the shock was felt, rushed out of their buildings and found a coffee house at Stevenson and Third streets had collapsed. They at once set to work with axes, and everything in the way of an implement with which they could provide themselves, to rescue those inside.

#### FEDERAL TROOPS ON GUARD.

Mayor Schmitz was about early, and took measures for the relief and protection of the city. General Funston was quickly communicated with and by 9 o'clock the Federal soldiers were guarding the streets and assisting the firemen in dynamiting buildings.

General Funston realized that stern measures were necessary, and gave orders that looters were to be shot at sight. Four men were summarily executed within six hours.

At a meeting of fifty citizens called by the Mayor it



was announced that 1400 tents would be pitched in Golden Gate Park, and arrangements had been made to feed the destitute in the public squares. A Finance Committee, with James D. Phelan at the head, was appointed and Mayor Schmitz was instructed to issue drafts on this committee for all funds needed.

### "THE DYNAMITE IS GONE."

Throughout Wednesday the fires that immediately followed the earthquake burned unchecked. Vast columns of smoke arose from a half dozen sections of the city, announcing to adjacent cities and towns that destruction was under way. The firemen, robbed of the only effective foe of fire by the breaking of the city water mains secured the entire supply of dynamite to be found in the city. They destroyed building after building in the path of the fire but without avail. The little gaps they made utterly failed to check the conflagration which, while it burned slowly, was none the less stubborn and resistless. Although the failure of the heroic efforts of the police, firemen and soldiers was at times sickening, the work was continued with a desperation that will live as one of the features of the terrible disaster. Nevertheless, while the people knew that the fire fighters were at work, even if they were depending on the uncertain aid of dynamite, there was a certain amount of confidence that somehow they would win.

This hope, too, was to vanish. In mid-afternoon it developed that the last charge of the explosive had been used. The firemen gazed into each others' eyes in despair. "The dynamite is gone!" was the word. The full import of this new catastrophe was immediately recog-

nized. "The city is doomed!" was the conclusion each one reached in his own mind. Presently someone coupled the phrases and then they sped around the city, from mouth to mouth, the dreadful culminating fact in the long series of horrors:

"The dynamite is gone and the city is doomed." It was the apotheosis of San Francisco.

Meantime the fire kept eating out the heart of the city.

It seemed that the acme of its misery was reached at dusk, when flames burst from all sides of the beautiful Hotel Fairmount, the structure above every other which was apparently most strongly protected from the oncoming fire.

Surrounding that lofty pinnacle of flames as far as the eye could see to the south, to the east, and far out to the west lay in cruel, fantastic heaps, charred and smoky, all that remained of a prosperous city.

#### SCENE OF DEATH AND DESTRUCTION.

Day dawned on a scene of death and destruction. During Thursday night the flames had consumed many of the city's finest structures and skipped in a dozen directions to the residence portions. They had made their way over into the North Beach section and, springing anew to the south, they reached out along the shipping section down the bay shore, over hills and across toward Third and Townsend streets. Warehouses and manufacturers' concerns fell in their path. This completed the destruction of the entire district known as the "South of Market street."

After darkness thousands of homeless made their way

with their blankets and scant provisions to Golden Gate Park and the beach to find shelter. Those in the houses on the hills just north of the Hayes Valley wrecked section piled their belongings in the streets, and express wagons and automobiles were hauling the things away to the sparsely settled regions. -

Hundreds of troops patrolled the streets and drove the crowds back, while hundreds more were set to work assisting the fire and police departments. The strictest orders were issued, and in true military spirit the soldiers obeyed. The curious were driven back at the breasts of the horses of the cavalymen, and all the crowds were forced from the level district to the hilly section beyond to the north.

The magnitude of the calamity became apparent when the sun rose and dissipated the pall of darkness that hung over the city. Looking eastward from the heights in the central portion of the city, everything attested to the awful havoc wrought by earthquake and flame. Where once rose noble buildings, stood nothing but frail walls, tottering chimneys, heaps of twisted iron and huge piles of brick and mortar. Adding to the horror of the situation was the fact that the work of destruction had not reached its conclusion and that the flames were raging beyond control.

It was with grief and horror that the community viewed the ruin. The people were seemingly half dazed by the magnitude of the disaster.

Policemen were stationed at some of the retail shops, regulating the sale of foodstuffs and permitting only a small portion of goods to be delivered to each purchaser,

the idea being to prevent a few persons from gathering in large quantities of supplies.

The military was unusually strict in observing the enforcement of the order to shoot all looters. One man on Market street, who was found digging in the ruin of a jewelry shop, was discovered by a naval reserve man and fired upon three times. He sought safety in flight, but the reserve man brought him down, running a bayonet through him. The bodies of three thieves were found lying in the streets on the south side. Many reports of looters being killed by the troops were current. Concerted action of any kind, in fact, was out of the question, and almost every official acted on his own responsibility, it being a physical impossibility to communicate with superior authorities.

#### DANGER FROM FALLING WALLS.

At first some sort of systematic communication could be had by means of automobiles, but after two days of the fire every street was piled high with ruins, and to add to this trouble there was constant danger from falling walls. On miles of streets the front walls of ruined buildings, still stood, swaying with the concussions of distant dynamite explosions and the rising winds. Frequently a crash of stone and brick, followed by a cloud of dust, gave warning to pedestrians of the danger of travel.

All manner of reports of death and disaster came to the temporary headquarters of the authorities, but these reports were received guardedly, allowance being made for the likelihood of exaggeration, due to the confusion that prevailed.

The fire on Sunday morning, at 7 o'clock, was burning grain sheds on the water front about half a mile north of the ferry station. It was confined to a comparatively small area by the work of fireboats on the bay and the firemen on shore who were using salt water pumped from the bay in the effort to prevent it from reaching the ferry building and the docks in that immediate vicinity.

On the north beach the fire did not reach that part of the water front lying west of the foot of Powell street. The fire on the water front was the only one burning. The entire western addition of the city lying west of Van Ness avenue was safe. The flames north of the ferry were under control at 8.30. They had burned as far south as the Lombard street dock, where they were checked by the firemen and soldiers under General Caster.

Everything except four docks was swept clean from Fisherman's Wharf, at the foot of Powell street, to a point around westerly almost to the ferry building. This means that nearly a mile of grain sheds, docks, and wharves were added to the general destruction.

In the section north of Market street the ruined district practically bounded on the west by Van Ness avenue, although in many blocks the flames destroyed squares to the west of that thoroughfare.

The Van Ness avenue burned line runs northerly to Greenwich street, which is a few blocks from the bay. Then the boundary goes up over Telegraph Hill and down to that portion of the shore that faces Oakland. Practically everything in the district bounded by Market street, Van Ness avenue, Greenwich street, and the bay is in ashes.

On the east side of Hyde Street Hill the fire burned down to Bay street and Montgomery avenue, and stopped

at that intersection. All south of Market street, with perhaps some exceptions in the vicinity of the Pacific Mail dock, is gone. This section is bounded on the north by Market street, and runs south to Guerrero street, goes out that street two blocks, turns west to Dolores, runs west six blocks to about Twenty-second, taking in four blocks on the other side of Dolores.

The fire then took an irregular course southward, spreading out as far as Twenty-fifth street, and going down that way to the southerly bay shore.

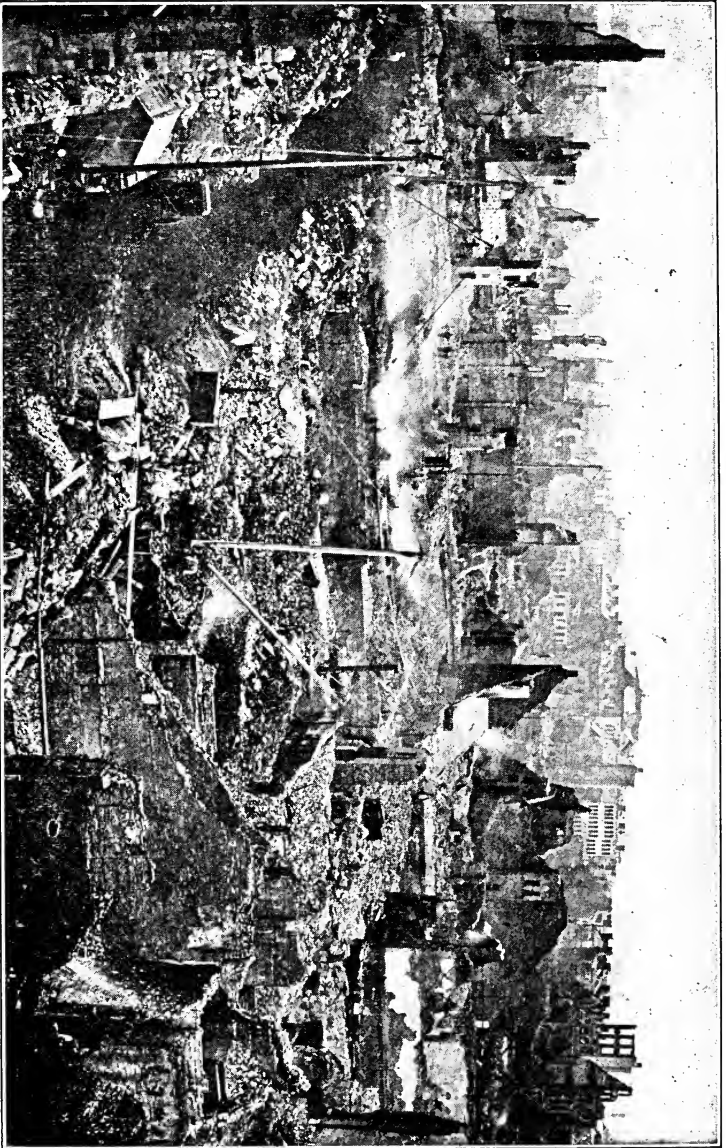
#### VALUABLE RECORDS FOUND INTACT.

The best news for property owners was that the records in the Hall of Records had been found intact. Had they been destroyed, a great tangle over real estate titles would have been the result. Now all such matters can be adjusted speedily. It was found that the Federal Court records also were unharmed.

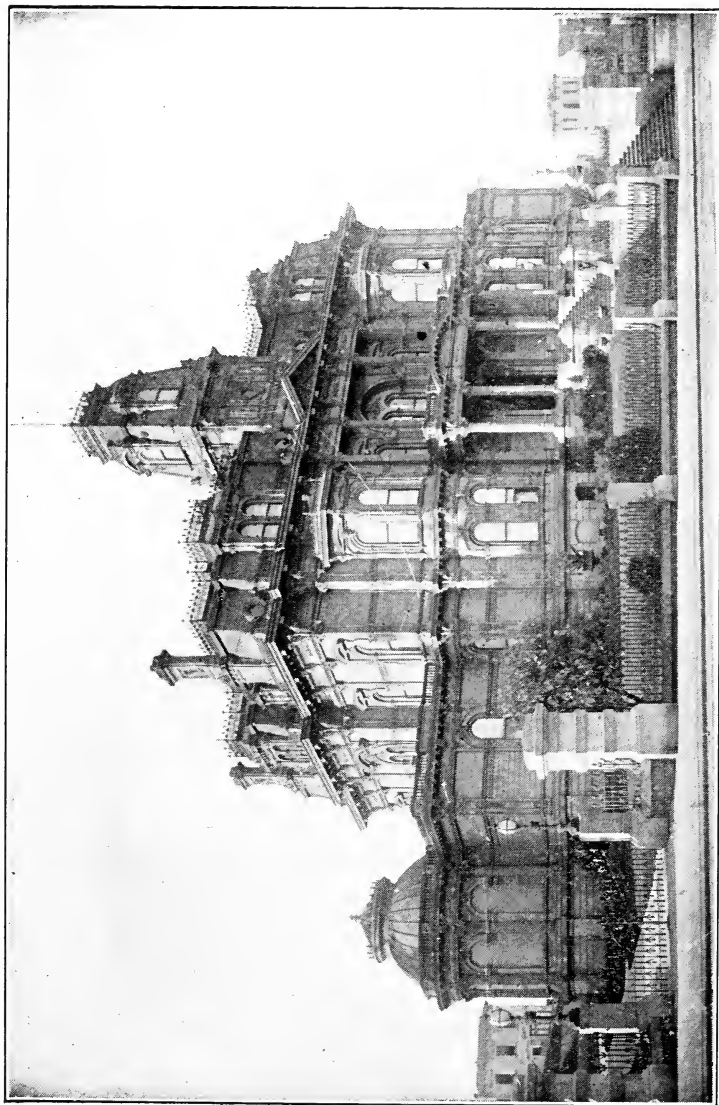
The great modern steel structures were practically uninjured by the earthquake, except for cracked walls and displaced plaster. All these structures of course subsequently were badly damaged by the flames so far as the inner construction is concerned, but the walls are, in most cases, intact.

The most notable cases of practical immunity from the shock were the St. Francis Hotel, the Fairmount Hotel, the Flood Building, the Mills Building, the Spreckels Building, and the Chronicle Building.

M. H. DeYoung, publisher of *The Chronicle*, telegraphed to Charles J. Brooks, his New York representative:



COMPLETE DESTRUCTION OF MANY DWELLINGS IN THE  
RESIDENTIAL PORTION OF SAN FRANCISCO.



PALACE OF A RAILWAY MAGNATE, NOB HILL, SAN FRANCISCO



"We have not missed an issue. New building all right. Will finish and occupy as quickly as possible. Tell all our friends that we appreciate all they have done for us. Everybody connected with the business and editorial departments are all well."

#### MINT AND POST OFFICE OPEN.

The branch of the United States Mint on Fifth street, and the new Post Office at Seventh and Mission streets are striking examples of the superiority of workmanship put into Federal buildings. The old Mint Building, surrounded by a wide space of pavement, was absolutely unharmed. The Mint was able to resume business at once.

The Post Office Building also was virtually undamaged by fire. The earthquake shock did some damage to the different entrances to the building, but the walls are uninjured. Every window pane, of course, is gone, as they are in almost every building in town, but the Government was able to resume postal business immediately.

The Fairmount Hotel, while seriously damaged in the interior, was left intact as to the walls, and the management offered space in the building to any of the various Relief Committees who desired to house the homeless or to store supplies.

Mission Dolores Church, the oldest building in the city, erected one hundred and thirty years ago by the Spanish missionaries, survived the earthquake shock and was saved from the fire. It is constructed of adobe blocks. The newer church, built of brick alongside of the old building, suffered from the earthquake.

A trip through the burned districts on Saturday re-

vealed a scene of unspeakable desolation. From many points on Market street, as far as the eye could reach in any direction, there was nothing but skeleton walls and smoldering ruins.

San Francisco was not destroyed by the earthquake. While old buildings in that part of the city, which stood on "made" ground east of Montgomery street, and some of that district lying south of Market, suffered from the shock, it was fire that wrought the great devastation and wiped out the entire business section and probably half of the residence section.

Much of the vigilance of the military authorities was devoted to the enforcement of the orders of the Mayor that no fires should be built in any buildings until after chimneys had been duly inspected and that no lights should be lighted in any houses.

In many cases persons who had fled from their homes in fear of the advance of the fire returned next evening and again took possession. Some of these at nightfall lighted lamps. Others attempted to make fires. In almost every case citizens interposed, and when they could not make the Mayor's order effective the military was called in.

In many cases persons built fires in the streets in order to cook food. But as the wind was blowing high these fires were forbidden and citizens and the military quickly had them put out.

On Sunday, rude altars set up in the open spaces of the burned city, formed centers of worship for the homeless, churchless thousands. It was a Sunday in striking contrast to the Easter day, just one week before, when San Francisco was on parade with all its wealth and finery.

Many ministers preached to crowds of dirty, bedrag-

gled men and women, the same who a week ago had made the Easter parade so gay and splendid. All over the parks there were congregations gathered around ministers, who preached from cracker boxes, or whatever improvised pulpit they could find.

One or two of the churches were able to have services indoors, but most of the churches lucky enough to escape burning were damaged so badly as to be unsafe. In some places the pastors preached from the steps of their ruined churches. Nearly all the refugees listened to sermons. A more religious day San Francisco has not spent in years.

#### A DAY OF WEDDINGS.

This first Sunday after the disaster was a day of weddings. It was amazing in a way to see a people, with their city destroyed, yet ready to marry and give in marriage. In this city marriage licenses are part of the formality of weddings. The romantic couples who wanted to wed in the face of disaster would have been embarrassed but for the city clerk who rescued the book of blanks for marriage licenses from the ruins of the City Hall on Friday. Young people who were betrothed before the earthquake decided to face the future as one. In a few cases the betrothals dated after the earthquake and the romances grew out of common danger and fearful experiences together while the great fire was raging.

#### THE TURN IN THE TIDE OF FLAME.

Sunday marked the turn in the tide of disaster. It became evident that the tremendous battle with the flames,

which had been waged on Saturday, had met with a marked degree of success and San Franciscans realized now that a portion of their city would be saved. On Sunday, too, it became possible for the city and Federal officials to give almost undivided attention to the work of relief.

Mayor Schmitz heralded the hopeful news in a proclamation, which will remain one of the historical features of the catastrophe. This was his message:

*"To the Citizens of San Francisco:*

"The fire is now under control and all danger is passed. The only fear is that other fires may start should the people build fires in their stoves and I therefore want all citizens not to build fires in their homes until the chimneys have been inspected and repaired properly. All citizens are urged to discountenance the building of fires. I congratulate the citizens of San Francisco upon the fortitude they have displayed and urge upon them the necessity of aiding the authorities in the work of relieving the destitute and suffering. For the relief of those persons who are encamped in the various sections of the city everything possible is being done. In Golden Gate Park where there are approximately 200,000 homeless persons, relief stations have been established. The Spring Valley Water Company has informed me that the mission district will be supplied with water this afternoon, between 10,000,000 and 12,000,000 gallons daily being available. Lake Merced will be taken by the Federal troops and that supply protected."

A clear sky over the mission district showed to those who were watching the progress of the fire that it had been extinguished in that direction. The spread of the flames

toward the western addition, the best part of the city remaining, had been stayed and the only part of the conflagration that now demanded the attention of the firemen was that extending from Nob Hill section down to the northwestern part of the water front. The western addition danger was averted at 2.30 o'clock on Sunday morning by the use of gun cotton, dynamite and two streams of water. The explosives were handled by the chief gunner of the Mare Island Navy Yard, and his accomplishments proved him to be a master of his profession.

Both the Mayor and Chief of Police Dinan, when asked for statements, expressed themselves as thankful that the fire was virtually controlled. Chief Dinan said that the order of the city astonished him. He thought it due to earlier severe measures taken by the soldiers and police in shooting down offenders.

The only bank in the huge ruined district that escaped destruction was the Market Street Bank, at the corner of Seventh and Market streets. It is in the gutted Grand Building, but on the ground floor.

A corner of the city near the Pacific Mail wharves at Second and Brannan streets was not ruined and the Sailors' Home was saved.

The Postal Telegraph Company, on Sunday night, restored its cable connection with the Orient by establishing a station at Ocean Beach.

Thousands of members of families were still separated and with no means of learning one another's whereabouts. The police opened a bureau of registration to bring relatives together.

**HIGH PRICES FOR WAGON HIRE.**

It was impossible to secure a vehicle except at exorbitant prices. One merchant engaged a teamster and his horses and wagon, agreeing to pay \$50 an hour. Charges of \$20 for carrying trunks a few blocks were common. The police and military seized teams wherever they required them; their wishes being enforced at revolver point if the owner proved indisposed to comply with the demands.

A policeman reported that two groceries in the neighborhood were closed, although the clerks were present. "Smash the stores open," ordered the Mayor, "and gaurd them."

The work of relief started early on Sunday. A big bakery in the saved district started its ovens and arranged to bake 50,000 loaves before night. Thousands of people were in line before the California street bakery. The police and military were present in force and each person was allowed only one loaf.

The homeless people in the parks and vacant lots were provided for as speedily as possible. The destitution and suffering was indescribable. Women and children who had comfortable homes a few days before slept—if sleep came at all—on hay on the wharves, on the sand lots near North Beach, some of them under the little tents made of sheeting, which poorly protected them from the chilling ocean winds. The people in the parks were possibly better off in the matter of shelter, for they left their homes better prepared. Instructions were issued by Mayor Schmitz to break open every store containing provisions and distribute them to the thousands under police supervision. The Young Men's

Hebrew Association's hall, near Golden Gate Park, was stocked with provisions for the use of needy victims in the adjacent fields.

The Southern Pacific Company succeeded in getting the first train through on the coast division on Friday night. It ran into the station at the corner of Third and Townsend Streets. Large gangs of men worked night and day until they opened the whole division.

The automobile played an important part in San Francisco, first by carrying dynamite from place to place in the fight against the fire, in transporting troops and firemen to places of danger, in bringing in supplies and forwarding press matter and telegrams to Oakland, and in a thousand other ways that proved valuable.

Almost every private machine in the city was in use, many of them voluntarily tendered, others seized by the military authorities.

The drivers were impressed into service. Working day and night from the hour of the earthquake, some of these operators were without sleep for days. As a result several of the chauffeurs fell into collapse in front of the municipal headquarters.

On the steps of the shattered churches and on the green slopes of parks and cemeteries people assembled at the usual hours on Sunday for religious services. Grateful for the opportunity to publicly express thanks for their preservation and anxious for the words of cheer and comfort that will carry them through future trials, the people assembled in even larger numbers than was customary. There was no distinction as to sect or denomination, the gatherings including as a rule a large percentage of the families camping or residing in the vicinity. Catholic clergymen celebrated

masses in the Jewish cemetery and every creed knelt with bowed heads while the services were in progress.

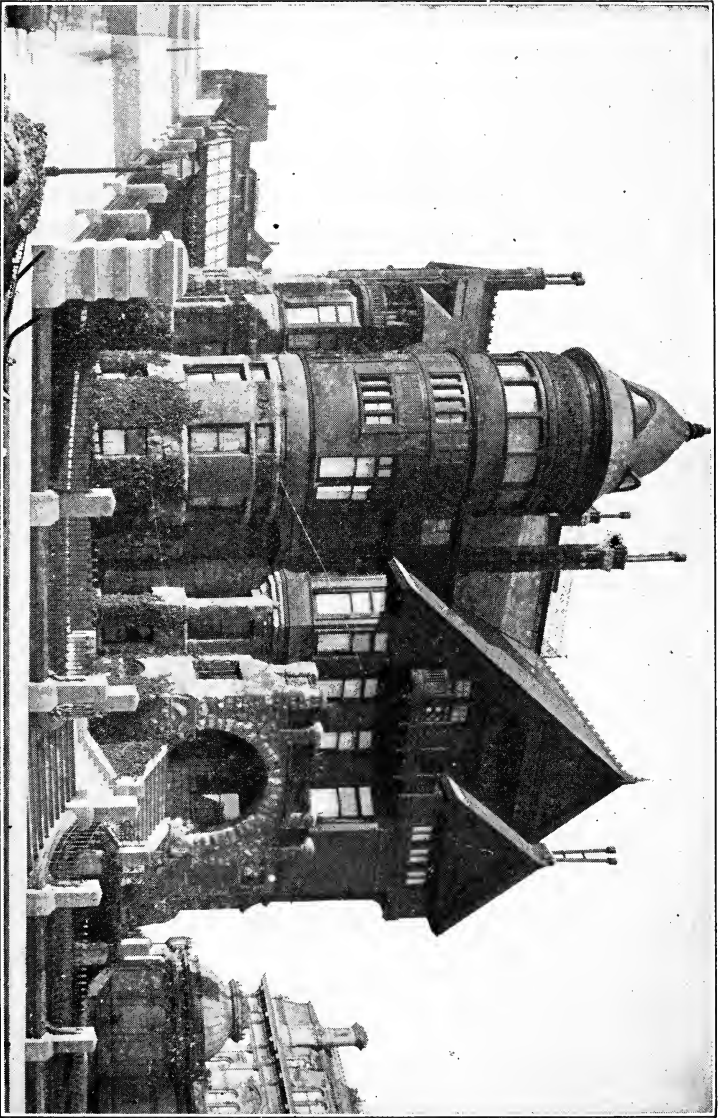
On the steps of St. Mary's Cathedral and on the upheaved pavement of Golden Gate avenue, overlooking the blackened waste that begins just across the street, Archbishop Montgomery celebrated mass at 8 o'clock. The service was attended by thousands, covering the church steps and extending well up and down the street in either direction.

The Archbishop's words and his reference to the death of Fire Chief Sullivan affected the entire assemblage, tears streaming down hundreds of faces upturned to the tiny altar in the open doorway of the vestibule.

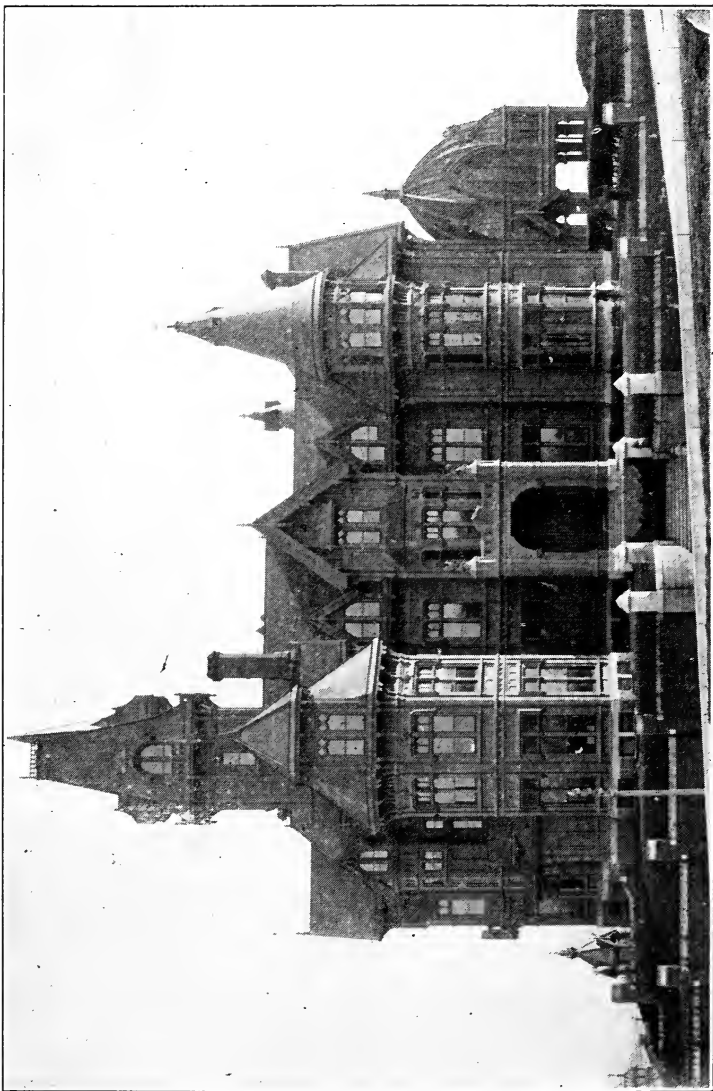
Five masses were celebrated at St. Mary's Cathedral. The Archbishop in his sermon recommended to the people that they be at all times submissive to the authorities, civil and military.

Close to the graves in Calvary Cemetery, on the narrow porch of a tiny house that stands within the graveyard inclosure, three masses were celebrated for the congregation of Holy Cross Church. They were largely attended, and the theme of the sermons was hope and courage in the face of adversity.





THE CROCKER RESIDENCE, SAN FRANCISCO



RESIDENCE ON NOB HILL, SAN FRANCISCO

## IN THE PATH OF THE CONFLAGRATION

San Francisco Bay is a long inlet in the western coast of California, forty-two miles long and from five to twelve miles wide. A long arm of land separates it from the ocean. The middle of that long ocean arm is pierced by a connecting link of water four miles long and one mile wide; that is the Golden Gate. South of the Golden Gate is a peninsula. And on the northern end of that tongue of land is San Francisco, the metropolis of the West, the largest city west of the Missouri River, the ninth largest city in the country, with a population of more than 400,000.

San Francisco is an old city. The first settlement made on the hilly peninsula was in 1769, when a party of Dominican padres who were looking for Monterey discovered the San Francisco Bay. The town was named after St. Francis, the founder of the order. In 1776 Governor Duigo Borica sent Don Pedro de Alborni to report upon the upper end of the southern peninsula as a place for a growing town. Having decided that both water and wood was too scarce on the peninsula to support a growing village, Don Pedro reported that the worst place in all California to start a city was what has become San Francisco.

Commodore Montgomery took possession of San Francisco for the United States in 1846, while Mexico and the United States were at war. Previous to the discovery of gold in the late forties the little town on the bay or eastern corner of the southern peninsula had but a thousand inhabitants. It grew up like a mushroom from that time on, in spite of its five destructive fires between 1848 and 1851, which swept out of existence the business section of the city and destroyed \$16,000,000 worth of property.

## BECAME A METROPOLIS.

San Francisco became, nevertheless, the metropolis of the gold-producing section. It was filled with a class of adventurous young men, and it had few old men and few women. Following the great fires, the town was so upset that a Vigilance Committee was made up to preserve order. For several years the law of the land was the committee, and many a man was hung because the committee so willed it. Crude as was this administration of law, it was effective, and San Francisco grew amazingly. In 1860 the population was 56,802; in 1880 it was 233,959. The United States census gave it 342,782 in 1900, and now it claims over 400,000.

The population of the city is the most cosmopolitan in the country, one-third of the people being of foreign birth. Of the foreign element the Germans predominate with some 40,000, the Irish coming next with nearly 25,000 souls. The Chinese now number possibly less than 25,000, and it is reported that the number is diminishing yearly. The Japanese of late years have been coming into the city fast. The Oriental atmosphere is more pronounced in San Francisco than in any other city of the United States.

Despite the saying of the old Spaniard in the early days that the peninsula by the bay was the worst place in all California upon which to found a town, its position has helped San Francisco in its remarkable growth. It is the boast of California that all the navies in the world might ride in the land-locked bay. Shut in on all sides by rocky mountains of from 1000 to 2000 feet in height, San Francisco Bay is a perfect natural harbor, to which the shipping of the West has been naturally attracted.

The upper end of the bay connects with San Pablo

Bay, which is some ten miles in diameter, and that in turn connects with Suisun Bay by the Strait of Karquines. The waters of the Sacramento and San Joaquin empty into Suisun Bay.

The situation of the city upon its peninsula gives it a unique climate. The Summer trade winds blow across the city, and during thirty years of observation the lowest temperature recorded was 29 degrees and the highest 100, while the lowest mean temperature for any one month in that period was 46 degrees and the highest 65 degrees. Semi-tropical plants grow there in the winter.

And so because of its harbor, its climate, and its surrounding country, San Francisco grew to be the metropolis of the Pacific Coast. Its harbor is the chief cause of its upbuilding. From San Francisco run steamship lines to China and Japan, Australia, Mexico, Central and South America and the Hawaiian and Philippine Islands. An active coastwise trade centres at San Francisco. The activity of trade in the city is reflected by its bank clearings, which were more than a billion dollars in 1902. Since the Spanish-American war and the Russo-Japanese war trade through the Western port has increased enormously.

The western side of the long southern peninsula is hilly, sloping down to the eastward to the bay, where along the northeastern shore much of the ground now occupied by the wholesale and banking and real estate buildings has been made by filling in. Some of the houses in these sections are built on piles driven down to bed rock. Along the southern edges of the city are several suburban settlements, and across the bay on the main coast to the eastward are Oakland, Port Richmond, Berkeley, Sausalito, Alameda, and other suburban places.

The city covers forty-seven square miles and there are

750 miles of streets and twenty miles of boulevards. The city is governed by a charter adopted by the people in 1900. The city is free from debt. There is a provision in the charter that only one per cent. of the assessed valuation of property may be collected for ordinary municipal purposes, but a clause makes provision for the levying of an extra tax to meet extraordinary requirements. The assessed value of San Francisco property in 1903 was \$428,000,000.

### GREAT FERRIES.

The Southern Pacific Railway is the only one that comes into San Francisco from the South by the mainland. The other systems take passengers to the city by huge ferryboats from Oakland and Point Richmond, across the bay. Even the Southern Pacific uses ferries into the city. Practically all who go to San Francisco by the land enter through the biggest ferry house in the world, which is at the northeast corner of the peninsula on the bay side.

The State maintains this ferry building, whose iron work was twisted by the earthquake. It is over 800 feet long, built of light-colored sandstone, and surmounted by a clock tower. The building contains a lofty nave, which is frequently used for exhibit purposes by the State. A complete exhibit of the mineral resources is maintained there by the State Mining Bureau. The ferry building is marked by quite a little architectural beauty.

Coming on the various big ferries from the railway terminals across the bay to the eastward, the traveler goes through the ferry building out to see San Francisco. Stretching out in front of him is Market Street, the main thoroughfare of the city, corresponding to New York's Broadway. It runs southwestwardly across to about the middle

of the peninsula, where it stops. The traveler will notice appreciated, and their details never lose dramatic interest. that the streets north of Market run down to it in a straight north and south direction, thus making a number of irregular triangular-shaped blocks. To the south of Market Street the blocks are laid off perfectly square. Away out at the end of Market Street one sees the Twin Peaks, the land rising up as it goes westward, so that looking at San Francisco from the east the houses seem to be piled one on another. Often the streets have a 50 per cent. rise, and along some sidewalks wooden cleats are nailed to assist one in climbing.

Before starting to walk out on Market, "up on" Market Street, the San Franciscan says, the traveler may take his directions. Straight across the rocky hills on the western side of the peninsula is the Pacific Ocean. On both sides of the Ferry Buiding, along the water front, extending some little distance, is the wholesale section of the city. On the right are many banks. At the northern point of the peninsula, to the northwest of one going in by way of the ferries, is the Presidio Reservation, where are soldiers.

Walking "up" Market Street four or five blocks one came to Sansome Street. To the right four or five blocks was Chinatown, where practically all the Chinese of the city were huddled, twice as many in winter as in summer. because the harvest season draws them out to the farms.

#### MANY BIG BUILDINGS.

Walking up a block or so more on Market Street, one came to Montgomery Street, near one of the centres of destruction. To the right was the big Postal Telegraph Build-

ing, which was destroyed. To the left of Market Street was the Grand Hotel. In this neighborhood were many restaurants and theatres.

The next street is Kearney Street, which comes in from the right. At that corner stood The Chronicle Building. It was the first of the higher buildings in San Francisco. Coming into Market Street from the left at about the same place as Kearney is Third Street. At the southwestern corner was the building of The Examiner. This is Newspaper Corner. Across Third Street, on the northwest corner, was the huge Spreckels Building, in which was The Call; it was destroyed. Just west of the Spreckels Building were the Grand Opera House and the Winchester House.

This section is the shopping district of the city. Many of the stores are, or were, on Market Street, but most of them were in the streets just to the right of it—Kearney, Sutter, Post, Geary, Grant, and Stockton Streets.

#### MAGNIFICENT CITY HALL.

Looking up Market Street some three miles one sees Yerba Buena Park, just to the right of the street. There was the magnificent City Hall, the most conspicuous building in the city, surmounted with a dome 332 feet high. It required twenty-five years to build, and its cost varied, according to different reports, from \$6,000,000 to \$9,000,000.

Running parallel with Market Street one block to the south of it is Mission Street, and on the corner of Mission and Seventh Streets was the Post Office. About opposite Seventh Street, on the right side of Market Street, was the Flood Building, a huge \$1,500,000 office structure.



In this neighborhood also was the Valencia Hotel. To the north of Market Street, between the City Hall and the Presidio Reservation, near the Golden Gate, is the hilly and fashionable residence section of the city. It is called "Nob Hill," and there the millionaires who put through the overland railways built their palatial homes, and there other rich men have also bought homes.

#### **BURNED AREA TWENTY-SIX MILES AROUND.**

When some order had been restored it was possible to get about and measure the extent of disaster. An automobile loaded with newspaper men was sent out to determine with accuracy the boundaries of the conflagration. In skirting the burned area on its four sides, this automobile traveled twenty-six miles as shown by the register on the machine. This does not show the exact circumference of the burned section, but it shows the length of the line along which the flames traveled. The area skirted by the automobile included the financial, commercial and most of the densely populated portion of the residence district, with all the splendid institutions and great mansions that had grown up with the progress of the city.

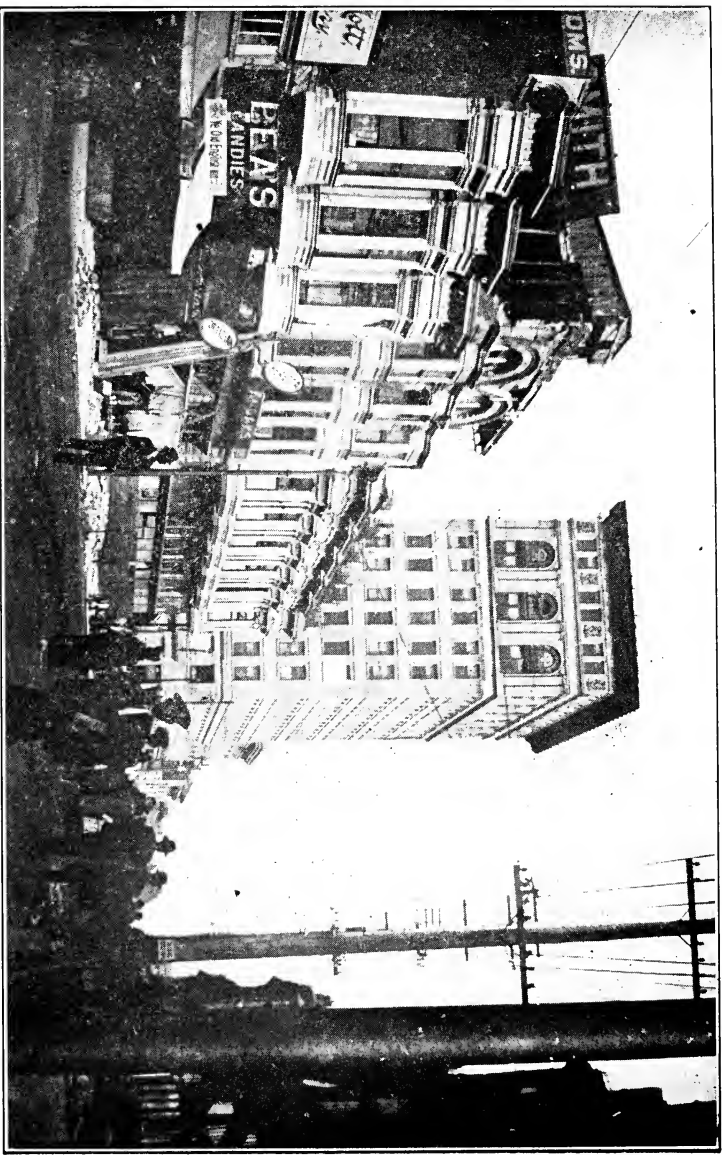
The start of the tour was made from the Pacific Mail dock at the corner of First and Brannan streets. Traveling along the north line of Brannan the fire ate its way to Second, where it crossed the street and consumed the warehouse of the great wine firm of Lachman and Jacobi, at the southeast corner of Brannan and Second. Thence it moved along the west side of Second to Townsend and along the north line of Townsend to Seventh. On this particular front it licked up the great building of the Southern Pacific at the corner of Fourth and Townsend streets.

Directly in front of the ruins of this building there were already evidences of the undaunted spirit that animated the citizens of San Francisco, for a hundred men were at work clearing the debris from Fourth street so that the Southern Pacific might run spur tracks northerly along the line of Fourth to Market street for the purpose of carrying away the immense masses of brick and ruined material littering the streets and sites of the business houses that so lately crowded that area. And in this connection it is noted that the freight and passenger depots along the southerly side of Townsend street as far east as Third, though built in the most fragile manner and of the most perishable materials were not so much as scorched.

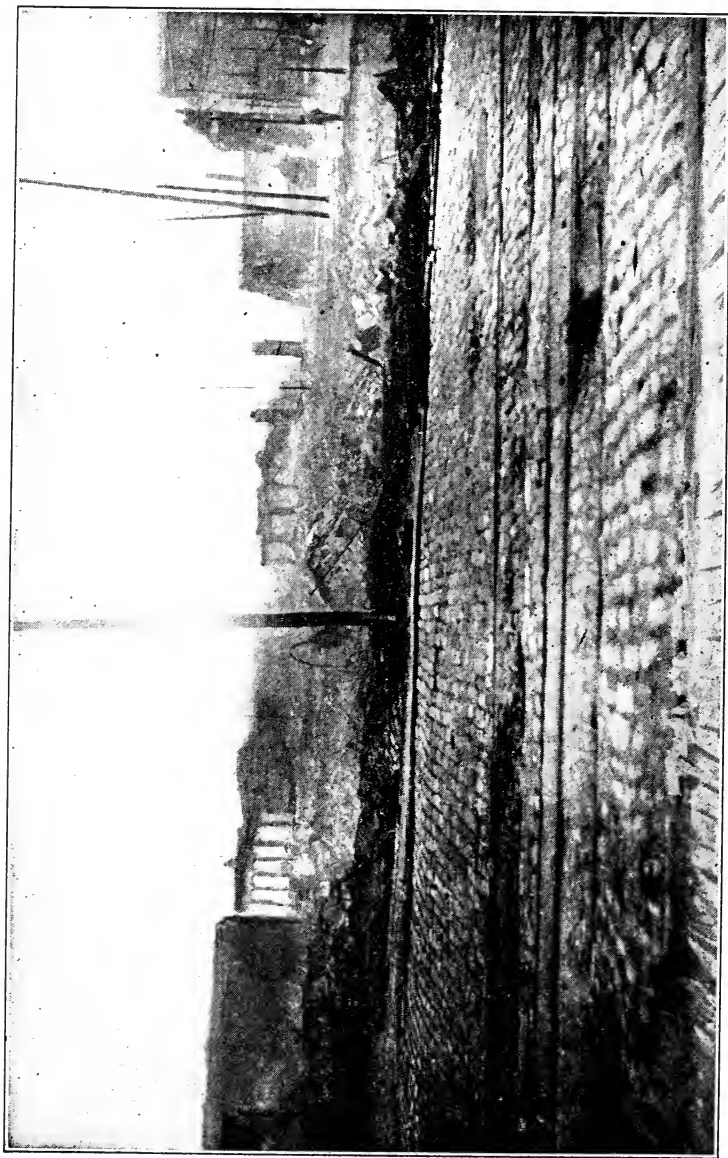
Standing at the corner of Fourth and Townsend streets one's eye caught the ruins of the great brick Catholic Church of St. Rose, one block distant on Brannan, near Fourth, which some eight years ago suffered a visitation of fire and had only lately risen on its ruin in what seemed to be imperishable brick and stone.

#### **STREETS SUNK INTO GREAT GAPS.**

It was noted that the block bounded by Seventeenth and Eighteenth, and Howard and Shotwell, though spared by the flames, had been terribly shaken by the quake. In some instances the houses were a mass of ruins, it being thought that of all the buildings in that square the only two that might be saved from the wreck were those of Lawyer W. C. Graves at 2189 Howard. Even the frame Catholic Church of St. Charles at Shotwell and Eighteenth appeared to be unsafe. The streets in this vicinity were sunk from six to eight feet in places and the earth opened in great gaps while the rails of the car system were twisted and broken.



BUILDING DESTROYED BY THE EARTHQUAKE



**DEVASTATION AND RUIN. CORNER HOWARD AND STEWART STREETS, SAN FRANCISCO.**

The fire extended along the southerly line of Golden Gate avenue to Van Ness, and along the easterly line of Van Ness to Sutter, where it crossed to the west side and burned the blocks from the north line of Sutter and the east line of Franklin through to Clay. In this district were included some of the most splendid mansions of the city, chief among which was the home of Claus Spreckels, at the southwest corner of Clay and Van Ness avenues. This splendid piece of architecture, done in brown stone in the chateau style and adorned with all that wealth and taste could gather, was blackened and divested of all its beauty.

#### ALL OF THE OLD LANDMARKS GONE.

Old landmarks, made famous by association with the early history of California as well as the new monuments to the commercial prosperity of California's metropolis, have been wiped out of existence. One of the first landmarks to fall a prey to the flames was the Palace Hotel, known the world over to travelers. It was built in the '70's by James Ralston at a cost of \$6,000,000 and was owned by the Sharon estate.

At Post street and Grant avenue stood the Bohemian Club, one of the widest-known social organizations in the world. Its membership includes many men famous in art, literature and commerce. Its rooms were decorated with the work of members, many of whose names are known wherever paintings are discussed and many of them priceless in their associations. Most of these were saved. There were on special exhibition in the "Jinks" room of the Bohemian Club a dozen paintings by old masters, including a Rembrandt, a Diaz, a Murillo, and others, probably worth \$100,000. These were lost.

The district on California street, from Powell to Jones street, known as Nob Hill, which was swept by fire, contained the most palatial homes of San Francisco. The summit of the hill is about 500 feet above the sea level and gives a magnificent view of San Francisco Bay and the country for many miles around.

#### FAMOUS STANFORD HOME.

At the southwest corner of California and Powell streets, just on the brink of the hill, was the Stanford residence. At the death of Mrs. Stanford, in Honolulu, the mansion became the property of Leland Stanford, Jr., University. It contained many art treasures of great value.

On the southeast corner of the same block stood the home of the late Mark Hopkins, who amassed many millions along with Stanford, C. P. Huntington, and Charles Crocker in the construction of the Central Pacific Railroad. The Hopkins home was presented to the University of California by his heirs, and it was known as the Hopkins Art Institute.

Across California street from the Stanford and Hopkins home stood the Fairmount Hotel, which had been under construction for more than two years. It was a handsome, white stone structure, seven stories high, and occupies an entire block.

One block west of the Fairmount is the Flood home, a huge, brownstone mansion, said to have cost more than \$1,000,000. The Huntington home occupies the block on California street just west of the Flood home. The Crocker residence, with its huge lawns and magnificent stables, is on the west of the Huntington home. Many other beautiful and costly homes are situated on the hill.

### REDUCED TO RUINS.

The Olympic Club, Post and Mason streets, the oldest regularly organized athletic association in the United States, and famous for its appointments and for the number of athletes it has developed, was burned to a skeleton. The building was worth \$300,000, and its furnishings were of the finest quality.

The great new Flood Building, built by James Flood at a cost of \$4,000,000, and occupied about a year ago; the new Merchants' Exchange Building, in California street, erected at a cost of \$2,500,000; the Crocker Building, at Montgomery and Market streets, worth \$1,000,000; the Mills Building, at Bush and Montgomery streets, costing \$1,000,000; the new Shreve Building, at Post street and Grant avenue, costing \$2,000,000 and occupied on April 1, by the largest jewelry store on the coast, are some of the new structures destroyed by the flames. The Shreve Jewelry Company carried a stock worth \$2,000,000.

On Market street, the Phelan Building, one of the earliest attempts at a pretentious work of architecture in the business section and covering the most valuable piece of real estate in San Francisco. is gone.

### FAMOUS OLD HOTELS.

The Occidental Hotel, on Montgomery street, for years the headquarters for army officers; the old Lick House, built by the philanthropist, James Lick; the old Russ House, also on Montgomery street; the Nevada National Bank Block, the Bayward Building, at California and Montgomery streets, a modern structure of ten stories; the severe Gothic style California National Bank, the

First National Bank, the Canadian Bank of Commerce, the London and San Francisco Bank, on California street; the London, Paris and American Bank, and the Bank of British North America, on Sansome street; the large German-American Savings Bank, also on California street, these are a few of the notable buildings destroyed in that region.

The California Hotel and Theatre, on Bush street, near Montgomery; the Grand Opera House, on Mission street, where the Conreid Grand Opera Company had just opened for a series of two weeks' opera; the Orpheum, the Columbia, the Alcazar, the Majestic, the Central, and Fisher's, were some of the playhouses destroyed.

#### APARTMENT HOUSES.

Among the splendid apartment houses destroyed are:

On Geary street—The St. Augustine, the Alexandria, the Victoria.

On Sutter—The Pleasanton, the Aberdeen, the Waldeck, the Granada.

On Pine street—The Colonial, the Lomivista, the Buenavista.

On Pine street—The Dufferin, the Hamilton, the Ellis, the Royal, the Hart, the Ascot, and St. Catharine.

On Farrell street—The Eugene, the Knox, the St. George, the Ramon, and the Gotham.

On Taylor street—The Abbey.

On Eddy street—The Abbottsford.

On Turk street—The Netherlands.

On Polk street—The Savoy.

On Bush street—The Plymouth.

San Francisco was famous for the excellency of its restaurants. Among them were the "Pup" and March-



and's on Stockton street; the Poodle Dog, Zinkands, and the Fiesta. They are no more.

#### FINE PAPERS BURNED OUT.

At the junction of Kearny, Market, and Geary streets stood the three great newspaper buildings of San Francisco—the Call (Spreckles'), the Examiner, and the Chronicle. All were destroyed. Two blocks north on Kearney street were the Bulletin and the Post buildings. They also are gone.

Among the large department stores destroyed are the Emporium and Bales & Frager's, on Market street; on Kearney street, the White House, O'Connor & Moffatt's, Newman and Levinson, Roos Bros., Raphael's, the Hub, and many lesser establishments; on Geary street were the Davis, the City of Paris, Samuels'; on Post street, Vel Strausson; on Sansome street, Wallace's, Nathan, Doherman & Co., and Bullock & Jones.

#### PALACE AND GRAND HOTELS.

Here follows more detailed descriptions of a number of the most important buildings which were destroyed.

The Palace Hotel, at Market and New Montgomery streets, covered two and one-half acres of land. It was seven stories high. The building cost \$7,000,000, and was projected by the late W. C. Ralston. The Palace was the most famous hotel in the city. It was the rendezvous of many notable men about town, particularly the gourmands of San Francisco.

The building was a huge pile of stone and brick, in the centre of which was a court, 84 by 144 feet. It had a bit-

umen drive for carriages 50 feet in diameter. The floor of the promenade was paved with marble. The west end of the court was encircled by a series of Doric pillars of classic design. The pillars were surmounted by a coping on which were tropical plants and flowers. Tables and settees were usually scattered about the court, where men might have an afternoon chat and smoke.

The court was covered by a glass roof, and a goodly number of the 850 rooms looked out into this opening which furnished them with a subdued light. The Hotel Palace was connected by a bridge across New Montgomery street with the Grand Hotel, which was under the same management, and which was also destroyed.

The Palace Hotel was provided with reading and smoking rooms, social women's and men's parlors, telegraph offices, billiard rooms, five elevators, a restaurant, and a grill room, which was considered one of the most elegant dining apartments for men in the world.

The outer and inner partitions were of brick from top to bottom. Four artesian wells furnished the hotel with water. From the top of the hotel a fine bird's-eye view of the city could be obtained. The extent of the corridors amounted to some two and a half miles. The style of the building was peculiarly San Franciscan, bay windows abounding.

#### THE CLIFF HOUSE.

This stands on Point Lobos, at the south head of the Golden Gate, on the extreme western coast of the peninsula. It was incorrectly reported to have slid into the sea. It was a favorite resort in the Summer, attracting thousands from the thickly settled eastern section of San Francisco.

One could sit on the veranda and look out over the ocean and watch sea lions playing around the rocks a few hundred yards distant. Out to the south he could see a long line of sea beach upon which the breakers rolled. On a clear day Farallone Islands, twenty-six miles distant, can be seen from the spot where stands the Cliff House.

The huge structure that overlooks the sea was designed after a French chateau of the seventeenth century. Running around it was an inclosed balcony. There were parlors, dining rooms, and halls where photographs of local objects of interest and curios were sold.

The Cliff House has suffered several disasters. It was first built in 1863. It was partly wrecked in July, 1886, when the schooner *Parallel* drifted in shore with 80,000 pounds of dynamite on board, which exploded. Having been rebuilt, it was burned to the ground on the Christmas night of 1894. Cliff House was seven miles from the Palace Hotel, and several car lines led to it. Its keepers boasted that Presidents Grant, Hayes, and Harrison had stood on its balconies.

#### OTHER PROMINENT BUILDINGS.

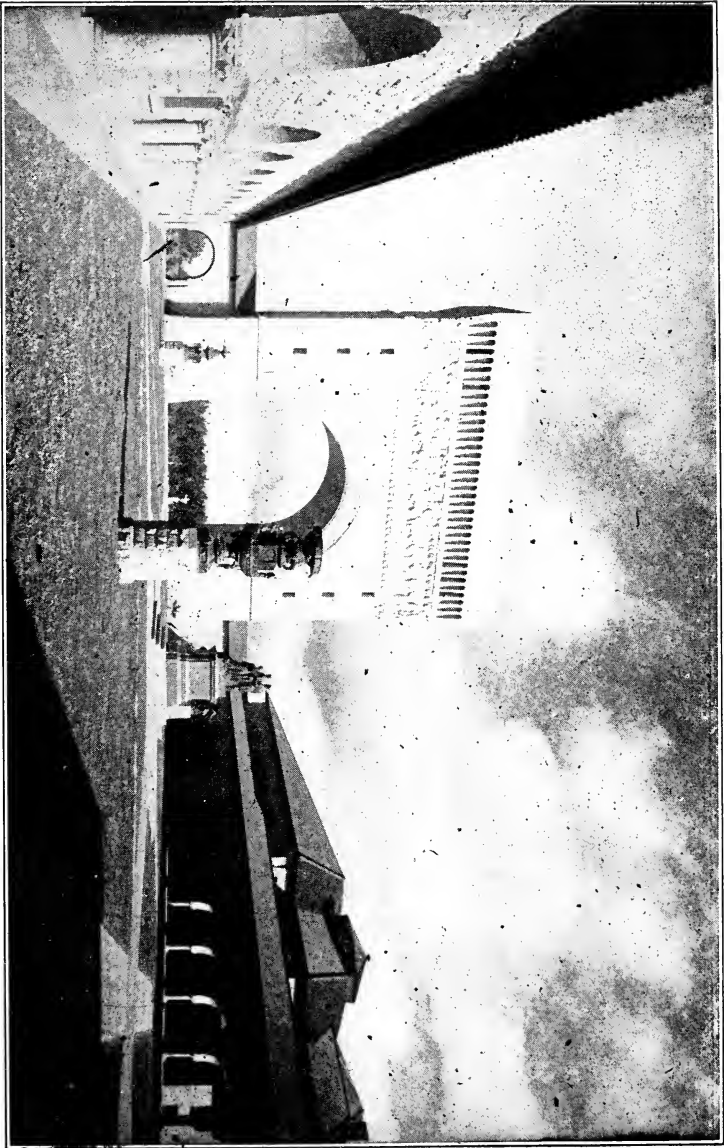
**St Francis Hotel.** By the burning of the St. Francis Hotel, which was consumed, \$4,000,000 went up in smoke. This magnificent house, at the time of its destruction, was being enlarged at enormous expense, and filled with guests. Among those stopping at the hotel when the building was destroyed were James Riley and wife, of the Hotel Walcott, New York City; several members of the Metropolitan Opera Company, of New York, and many other Eastern visitors. It was reported that no one was injured at the St. Francis.

The Call Building.—This was the tallest building on the Pacific Coast, and was occupied by The San Francisco Call, having in it, besides 272 offices. It was erected in 1896-7, at the southwest corner of Market and Third streets. From the basement to the top of the dome was 300 feet. There were sixteen floors. It was constructed entirely of marble, sandstone and steel, and was considered fireproof. It was of no little architectural beauty. It was one of the first buildings seen when one entered San Francisco.

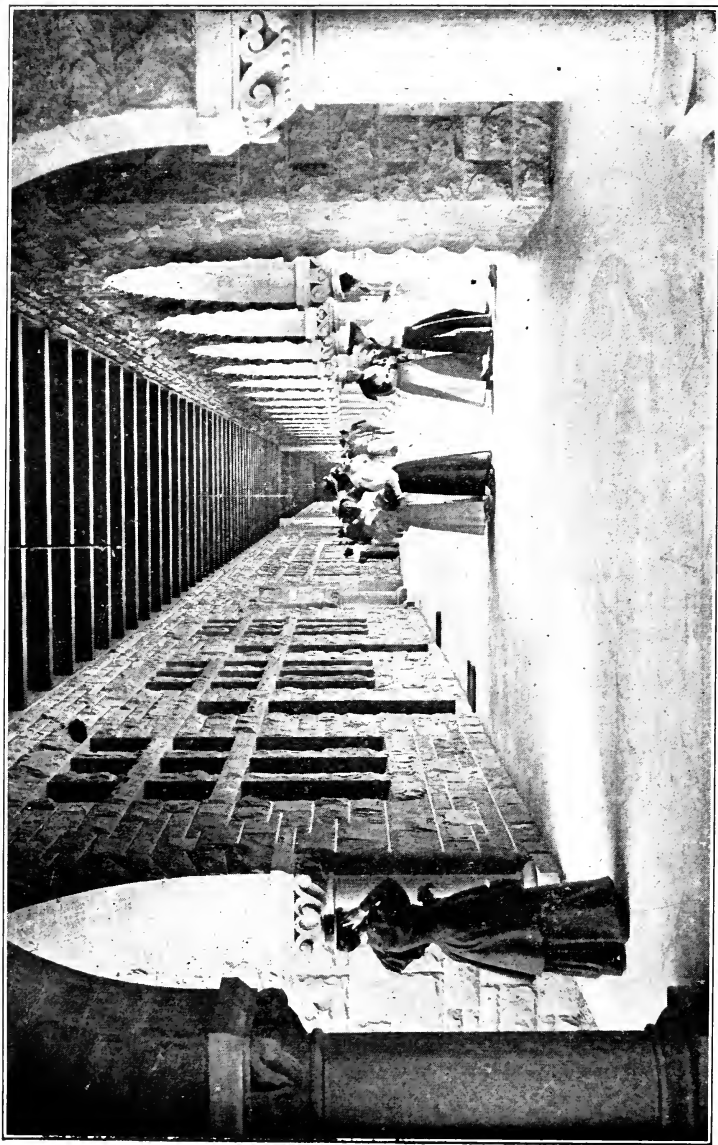
The Crocker Building.—This stood on the gore made by Post, Montgomery, and Market street. It was erected in 1892-1893, at a cost of \$1,000,000. It was eleven stories high, made of Rocklin granite and light pressed brick, with terra-cotta ornamentations. The ground floor was occupied by the Crocker-Woolworth National Bank and Shreve & Co., jewelers. The upper floors were divided into some 250 offices. The building was 130 feet, and was one which the San Franciscan always pointed out to the visitor.

The Fairmount Hotel.—It was just about ready for occupancy. It was seven stories high and of white stone. It required two years to construct it, and it was one of the very finest structures in the city, situated right across the street from the Mark Hopkins Art Institute, on California street, between Mason and Powell streets. Its cost was \$2,000,000. Mrs. Herman Oelrichs had traded it for two buildings downtown, both of which were destroyed.

Mark Hopkins Institute.—This was formerly the magnificent private residence of Mark Hopkins, one of California's pioneer citizens, at the southeast corner of California and Mason streets. It was given to the city in



MEMORIAL COURT AND ARCH AT LELAND STANFORD UNIVERSITY



ARCADE AT LELAND STANFORD UNIVERSITY

1893 by E. F. Searles, of Methuen, Mass. It had been used for illustration and instruction in the fine arts. It contained many fine specimens of painting and sculpture. A spacious gallery had recently been added to the institute. The interior of the house was finished with rare woods and beautiful frescoes.

The Lick House.—This was one of the quiet, family hotels of San Francisco, in Montgomery street, between Sutter and Post streets. The building was completed in 1861; it was one of the very old hotels. When it was first completed its dining hall was considered one of the finest in the world. The site of the Lick House was once a sand dune, and the ground sold for \$300.

The Grand Opera House.—This stood on the north side of Mission street, between Third and Fourth streets, near Market street, the main thoroughfare. Its stage, which was 100 x 120 feet, was the largest on the other side of the Rockies. It seated nearly 2,000 people, and cost \$500,000 when it was opened in 1876 as Wade's Opera House.

Merchants' Exchange.—This three-story building was on the south side of California street, between Montgomery and Sansome streets. It was surmounted by a clock tower 120 feet high. Incorporated in 1868 by the State, the Merchants' Exchange had for its object the acquirement, preservation, and dissemination of information concerning commercial and maritime exchange. The United States Hydrographic office was in the building.

The Occidental Hotel.—This hotel was a sort of headquarters for army and navy officers in San Francisco and visitors from the Pacific islands. It occupied the entire block on the east side of Montgomery street, between Sutter and Bush streets, and was a rather old-style four-

story building, with cement facings, though its table was noted in the city.

The Russ House.—This was a merchants and farmers' hotel. It was one of the old-style, low, rambling buildings, being only three stories high, but covering the entire block on the west side of Montgomery street, between Bush and Pine streets. It was erected in 1862 by Christian Russ, who bought the site in 1847.

Mills Building.—This was one of the finest buildings in the city, being ten stories high and made of California marble, light-pressed brick and terra-cotta. It cost \$1,500,000. and was put up in 1891-2 by D. O. Mills at the northeast corner of Montgomery and Bush streets. The three entrances from Bush, Pine and Montgomery streets led into a great open court in the centre. The entrance from Montgomery street was through a magnificent marble arch that extended to the top of the second story. The halls were tiled and wainscoted with marble. A complete law library was supplied for the use of the tenants. The United States Weather Bureau had its headquarters on the top floor, with the signal station on the roof. This was another building which the San Franciscan was always proud to point out to the visitor. Built of iron, stone, bricks and marble throughout, it was thought to be proof against both earthquakes and fires.

City Hall.—This occupied a large three-cornered tract of land bounded by Larkin and McAlister streets and City Hall avenue. It required twenty-five years to erect this building, and San Franciscans learned to designate a long period of time by saying, "As long as it will take to build the City Hall." It cost between \$7,000,000 and \$9,000,000. Connected with the City Hall was the Hall of Records, which was surmounted by a dome 134



feet high. The building was surrounded by Corinthian pillars forty-eight feet high.

The land upon which the City Hall stood was formerly the Yerba Buena Cemetery, and there once lay the bodies of the early pioneers of the city. The bodies were removed to Laurel Hill and other cemeteries in the early sixties. In the northwest wing of the building was the City Prison. The Receiving Hospital occupied a like position in the southwest wing.

St. Ignatius Church.—This was the largest church in the city. It stood in the fashionable district, on Hayes street, between Van Ness avenue and Franklin street. It cost \$2,000,000, and was the finest Jesuitical church in the world. Its spires, 275 feet high, were the tallest in California. Its organ was the second largest in America, and was the only one on the coast operated by electricity. It weighed 100,000 pounds. Its central columns were surmounted by life-sized angels with trumpets, and the outer ones supporting huge urns holding burning torches. The organ was presented to the church by Mrs. Welch. The main hall of the church was 200 feet long. Hanging over the altar was a large oil painting representing the reception in heaven of St. Ignatius Loyola.

The Chronicle Building.—This was one of the first high buildings erected in San Francisco. It was nine stories high, surmounted by a bronze clock tower 210 feet high. The building was of pressed brick and a dark brown sandstone that is found in Ventura County. The building was fitted with all modern improvements. It was one of the handsome buildings that made Newspaper Corner a centre of no little architectural beauty. The Chronicle occupied the basement, the first floor, and the top floor all the other floors being rented as offices.

The Examiner Building.—Before this collapsed it was eight stories high, standing on the southeast corner of Market and Third streets, the corner near which were all the big newspaper offices. The offices of The Examiner, Mr. Hearst's San Francisco paper, occupied the rotunda of the building, the rest being rented for offices. The building was of the Spanish Renaissance style. The severity of its exterior was broken by the ornamented windows of the second story and the loggias with their decorated columns along the top stories.

The Hall of Justice.—This was one of the newest, if not the newest, public buildings in the city. It was situated on the east side of Kearny street, between Washington and Merchant streets, opposite Portsmouth Square. The cornerstone was laid in 1896. . It contained Police Headquarters, the police courts, and the Criminal Departments of the Superior Court. It stood on notorious ground. It was in that neighborhood that the most famous gambling dens were located, and there, later on, the Jenny Lind Theatre was burned down and rebuilt.

Parrott Building.—This big seven-storied building occupied the site of the old Jesuit Church on the south side of Market street, between Fourth and Fifth streets. The two lower floors were occupied by the Emporium, one of the biggest department stores in the world. This store used nine acres of floor space, maintained sixty departments, and employed 2,000 persons. Its shelves were of mahogany with marble bases. A dome 100 feet high surmounted the building.

Phelan Building.—Situated at the gore of Market and O'Farrel streets and Grant avenue, this large, five-story building was conspicuous in the sight of one walking up the main thoroughfare of Market street. It was the

headquarters for the California Department of the United States Army.

Hibernia Bank.—This bank stood at the junction of Market, Jones, and McAlister streets, and was one of the handsomest buildings in San Francisco. It was constructed of white granite with Corinthian columns. A massive dome surmounted the roof, and the entrance at the corner was ornamented by graceful columns of granite.

California Hotel.—This hotel was situated on the north side of Bush street, above Kearny. It was eight stories high, made of carved stone and pressed brick. It was opened in 1890 and was one of the first-class hotels of the city.

Grace Church.—This was one of the older churches of the city, having been built in 1866, the corner-stone being laid by Bishop W. I. Kipp. It stood at the southeast corner of California and Stockton streets, on the eastern slope of the hill of California street, and was a conspicuous object from downtown. It cost \$125,000.

Orpheum Theatre.—This theatre presented the best class of varieties in the West. It had the largest seating capacity of any playhouse in San Francisco, seating 2,500 people. It stood on the south side of O'Farrel street, between Powell and Stockton streets.

The Columbia Theatre.—This was a pretty little playhouse, situated on the west side of Powell street, above Market street, opposite the Baldwin Hotel. It seated 1,400 people, and was first opened as Stockwell's Theatre.

Mechanics' Pavilion.—The pavilion stood at Larkin and Grove streets, and there every year the Mechanics' Institute gave an industrial exhibition.

**LOSS OF THE SUTRO LIBRARY.**

An irreparable loss of the San Francisco earthquake was the destruction of the great Sutro library of old books. This was stored in two divisions, one in the Upham Building, at Pine and Battery streets, and one in a building at Montgomery and Washington.

Adolph Sutro made a fortune in the Comstock and the other Nevada silver properties in the early days. Later he built a five cent road to the Ocean Beach, in opposition to the regular street car companies, which were charging a ten cent fare, built a park overlooking the Cliff House and Seal Rocks, which he gave to the people of San Francisco, and handed over to them also the Sutro baths, having the largest swimming tank under roof in the world. On the strength of these gifts and his genuine personal popularity he was elected Mayor of San Francisco.

Early in his career Sutro developed a hobby for old books and conceived the idea of collecting a great library of them. For ten years he and his agents bought all over the world. Although he was imposed upon by a great many forgeries and acquired much that was valueless, he made some fortunate purchases, and his wholesale method of buying enabled him to get a great deal of gold along with the dross.

For example, in 1886 or thereabouts, Bavaria confiscated the property of the Catholic monasteries in the kingdom. Their books were lumped into one great lot, and Sutro bought them all, including thousands of manuscripts dating back before the age of printing, which had never come under the notice of scholars. In the same way, when the Mexican Government discovered a forgotten collection of books, memorials, diaries and manuscripts

bearing upon the early history of California and Lower California, especially the mission period in the boundaries of the present United States, he bought them all. This collection, from which it was prophesied the true history of the old Pacific Coast would some day be written, was never even taken from its boxes. He had a standing order with Quaritch for certain lines of books, and he was willing to pay anything for what he wanted. In the end the collection reached a total of about 225,000 volumes.

When it had grown to that size Sutro brought a bookman named Moss from the British Museum, and had him make a beginning of classifying and cataloguing it. Moss began to straighten it out, but he had worked only a year or two when he died. In 1897 Sutro died also.

It had been his intention to give the collection either to the University of California or to the city. But he left no late will. The only one in existence was drawn up before the time of his collection, and it left all his books and papers to his sister, Dr. Emma Sutro Merrit. There followed a double contest over his property, which was found to have depreciated greatly. A Mrs. Kluge appeared, who said that she was his wife by a contract marriage; and some of his children by his first marriage raised a contest of their own. The estate has remained ever since tangled in the courts. Dr. Merrit, who had temporary custodianship of the library, closed it absolutely. Since that time, no one has been permitted to enter it except a custodian and an occasional scholar who has been able to get through the red tape which surrounded it.

## COLLECTION NEVER CLASSIFIED.

Since the collection has never been classified, no one living knows absolutely just what was there. Here, however, are some of the known treasures.

He had a complete collection of Shakespeare folios—first, second, third and fourth. Some of the early pages of his first folio were missing and were supplied in fac-simile. The pages of the second folio were slightly scorched, because it had passed through the London fire—to perish in the San Francisco fire two and a half centuries later. There was nearly a full set of folios of Ben Jonson.

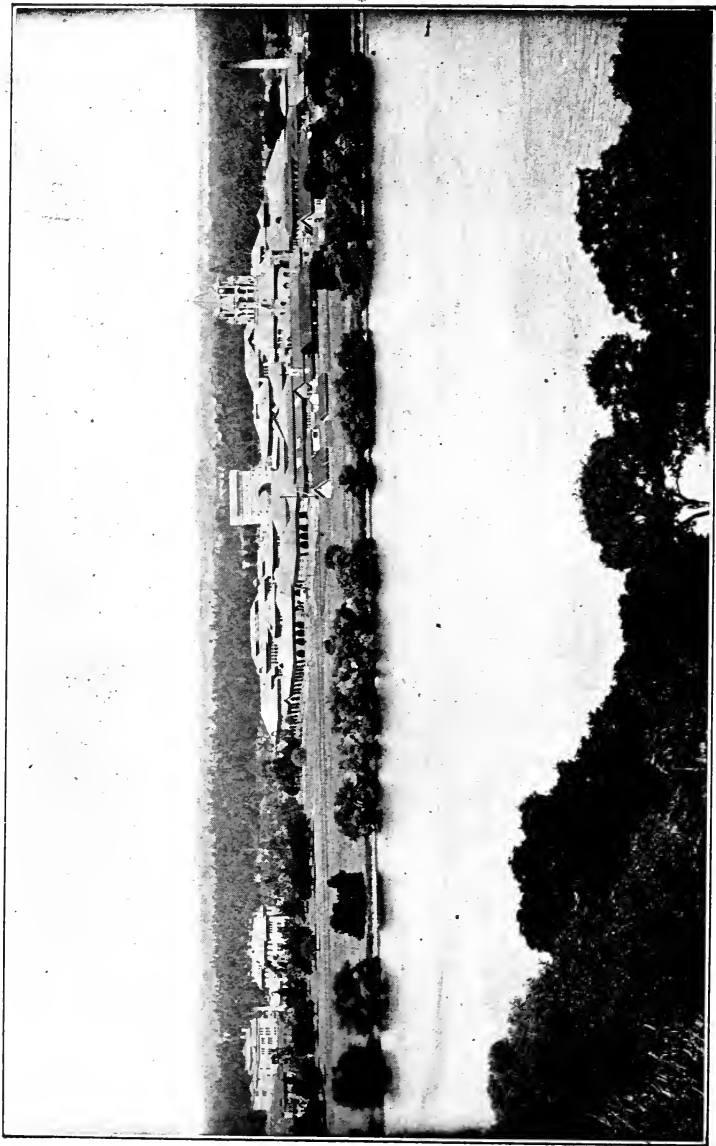
The collection of Shakesperiana included the rent roll of Shottery Meadow, Stratford, which he had some difficulty in getting out of England, the newspapers and the authorities of the British Museum declaring that such documents should not go out of their country.

An old prayer book and a hymnal, bound literally in boards, were interesting historically; for authenticated documents showed that they were the very books placed in the hands of Charles II. on his re-entry into London after the Restoration. His collection of the Book of Common Prayer was very strong, including most of the famous editions from the time of Edward VI. down to the last century.

A random summary of the other "show" books would include some specimens of Gutenberg and Caxton printing, a great deal of fine work from the Aldine and Elzivir presses, several firsts of Ben Franklin, and many rare and valuable incunabula. Of the Hebrew collection, said to be very valuable, less is known, but some of the scrolls dated back to the tenth century and the one most valuable work in the collection, according to Sutro, was one of these



Copyright, Judge Co., 1906.  
**FACING ALTAR—RUINS OF MEMORIAL CHURCH, LELAND  
STANFORD UNIVERSITY.**



BIRD'S-EYE VIEW OF LELAND STANFORD UNIVERSITY



Hebrew manuscripts. It was valued at \$10,000, and Sutro had some correspondence over it with the Vatican authorities, who wanted to buy it and paid for a transcription of its text.

There was also discovered a few years ago an incomplete and uncatalogued Shakespeare first folio which he bought in a lump with a number of other old books.

Outside of these books, valuable only to a bibliomaniac, there was a great mass of matter which made strong appeal to scholars, and which would have made this library of great value to any university. His collection of British pamphlets and broadsides, running from the early seventeenth century to the late eighteenth, was said by Moss to be the most complete outside of the British Museum. There were several thousand of these, and, bound into book form, they occupied three great ranges of the warehouse.

#### ANCIENT NEWSPAPER FILE.

Very full, too, was the collection of French and English newspaper files of the late eighteenth and early nineteenth centuries. It may be doubted if there was anything in the country, or anywhere outside of France, to equal this in original sources on the French Revolution. The same may be said of the books bearing on European history in the late Middle Ages and the Renaissance.

Bavarian books, mentioned before, were a great treasury in themselves. Whether printed or in manuscript, many of them were bound and backed with older manuscripts, and many of them showed by the dim traces of writing beneath, that they were palimpsests. These books had never come under the eyes of scholars, and there was every chance of discoveries. Yet perhaps the greatest loss

to scholarship, if the library is really gone, lay in the Mexican collection which would have furnished the means of rewriting the early and romantic history of the Pacific coast.

The library, as said before, was in two sections. In Montgomery street Moss had gathered the books which he had classified and begun to catalogue, and there were the most valuable, such as the Shakespeare folios, the copies of Ben Jonson, the Shakesperiana and the English pamphlets. Fully 150,000 volumes were in the Battery street section, which is certainly gone. There were the monkish manuscripts, the works bearing on mediæval history, and all the undiscovered country for scholars.

The final disposition of the Sutro library, had it not been destroyed, was uncertain. The University of California thought at one time of buying it by arrangement with the heirs, but lacked the funds at the time. Stanford, which has the money, is a scientific university, which cares less for that kind of thing, and the authorities felt that money spent in books might better be devoted to modern works.

It was always understood that, in case the original will held, Dr. Merrit, ever at a great loss to herself, would respect the wishes of her brother and give the books either to one of the universities or to the people of San Francisco. In case of any other settlement it might have been taken abroad and sold by auction.

#### STANFORD UNIVERSITY LOSSES.

Palo Alto and Stanford university suffered by the earthquake. At Stanford many of the handsome buildings, including the splendid Memorial church, were demolished,

and two people were killed. They were Junius Robert Hanna of Bradford, Pa., and Otto Gurts, a fireman. Six other students were injured.

Stanford University, the richest institution of learning on the Pacific Coast and one of the richest in the country, has had a varied and interesting history since it was opened for students in 1891. It has passed from extreme poverty to extreme riches, and weathered more than one storm among its faculty. The great building scheme, which allows for an almost indefinite expansion in the number of students was just on the verge of completion when the trouble came, and the university, which had been spending the income on its endowment for buildings, was preparing for a great expansion in departments and teachers.

Leland Stanford, Jr., only child of Senator Leland Stanford and his wife Jane, died of Roman fever in Italy in 1887, at the age of 16. All the hopes of his parents had centred on him; and after his death his mother forsook the gay life which she had led as the wife of one of the richest and most prominent Californians and devoted herself to charity. In his later days the boy had dropped a remark about what he wanted to do with his money; and this, it is said, determined them to found in his memory a great free university for the youth of California and of the world. Senator and Mrs. Stanford travelled abroad studying the great institutions of Europe. Senator Stanford spent days with President Eliot of Harvard and other educators, learning their views on education and the best use of money for educational purposes, and the result was a university which in its ideals gives the greatest freedom to the individual and makes its aim preparation for usefulness in life.

Stanford was not a university man, and he recognized his limitations. It was his plan to go to the best of those who should know and take their advice on details. In the character of the university he had been guided largely by Eliot. In planning for the external features he went to Richardson, the architect of Trinity Church in Boston. Richardson laid it out on the plan of the old California missions, an adaptation by the architects among the padres of Moorish architecture to the peculiar weather conditions of California. His imitation was not slavish, however; he departed widely from the model and escaped the formlessness which has marked most modern buildings in the so-called California mission style. The main features of the plan were an inner quadrangle surrounding an inner court and a series of outer quadrangles of two and three story buildings. In that inner quadrangle were twelve one story buildings, low and massive, but roomy and affording excellent recitation rooms. The main feature of the plan, however, was the arcades, which ran everywhere about the buildings and which provided against the rainy season since they made it possible to go from any part of the main structure to any other without getting wet. The whole mass, in the plan of Richardson was capped by a low, massive arch which formed the centre of the front facade and backed by the pile of a great church in Italian Renaissance style. Flanking the main buildings on either side were Encina Dormitory for men and Roble for women.

The inner quadrangle, three isolated engineering buildings and the two dormitories were completed when the university opened for instruction in 1891. They were all built according to the plan. Upon Encina Hall in particular Senator Stanford lavished great care. He insisted upon sinking the foundations twice as deep as was neces-

sary, and all work was done by the day and not by contract. It was his idea to have it stand for centuries—"Even against earthquakes," he said.

When the university threw its doors open the authorities hardly expected an immediate response from students. As a matter of fact, in two years they had nine hundred men and women in attendance. At the end of those two years Senator Stanford died, and two things happened which nearly swamped the institution. The hard times struck the country, greatly depressing the securities upon which the university depended for its life, and the government entered suit for the restoration of the value of the bonds upon which the Union Pacific fortune rested. There is no space to dwell on the details of this case. Had the Government won the university would have gone out of existence. While the estate was tied up in the courts about \$100,000 a year was awarded to Mrs. Stanford as a living allowance. That was all the university had to run on. She reduced her own personal expenses to \$100 a month and handed all the rest over. The next two or three years brought a heroic struggle to keep the university alive through the clipping of salaries to the lowest point, the sale of every chattel not tied up in the courts, and even of Mrs. Stanford's personal jewels. Several times, only the courage of Jane Stanford and her loyalty to the ideal of her husband prevented the closing of the university. The case ran through all the courts, with a final decision in favor of the university. Finally it was out of the courts, the hard times were over and she went ahead to finish the building scheme while she had her strength.

Mrs. Stanford, unlike her husband, interfered with the plans of the architect. The result was several features

which folks of an artistic bent regarded as blots. The arch was raised thirty feet from the original plan, and it stuck up out of the mess of buildings high beyond all proportion. Further, it was desecrated by a horrible frieze. The chapel, too, was plastered outside and inside with Venetian mosaics, considered out of place in such architecture. These, however, were only minor blurs. In the main, the noble plan of Richardson was carried out. The university as it stood had first the main mass of buildings, about two dozen in all. Apart from this stood the dormitories, a chemical laboratory, the most successful single building in the whole place, a museum and a set of engineering buildings. Work was under way on a great library to supplement the one already in use, and ground had been broken for a gymnasium and athletic field.

Several years ago Dr. David Starr Jordan, president of the university since its foundation, got it considerably into the papers through the so-called Ross controversy. This grew primarily out of a schism in the faculty. Prof. Edwin Ross, head of the department of sociology, was discharged ostensibly because he criticised certain financial interests in which Mrs. Stanford was interested. The issue was considerably clouded, and to this day it is not certain whether Mrs. Stanford wanted him sent away or whether Jordan acted upon his own initiative. At the same time several professors in sympathy with Ross resigned. Later there was a controversy of the same sort in which Prof. Pease, one of the strongest men at the university, lost his place, and this was followed by the affair of Prof. Julius Goebel, head of the German department.

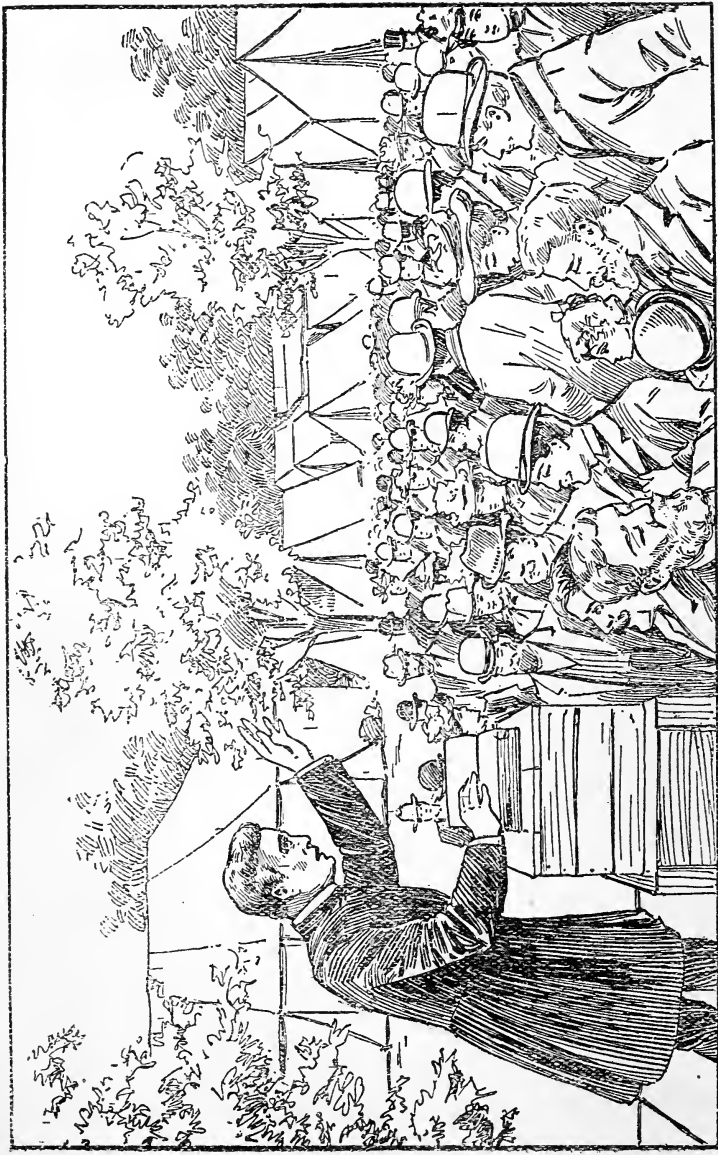
Mrs. Stanford died in Honolulu in 1905. Several years before her death she had turned over the whole Stanford fortune to the trustees of the university. The endow-

ment and property were estimated in 1905 at \$33,000,000, and was then growing fast in value. With the completion of the building scheme, set for this year, the university would have had about \$800,000 a year to spend in maintenance. The plans for the future included, first, the purchase of one of the greatest American libraries, and second, the addition of many departments and professors.

However great the loss by the earthquake, it is entirely probable that the trustees of Stanford will determine to rebuild at once, although perhaps not on a scale so elaborate.

Stanford has about 1,600 students, of which number a little less than 500 are women. The attendance of women for the present is limited to 500. Instruction in all departments is absolutely free, and at least one-third of the students come from east of the Rockies. The softness of the climate, the beauty of the surroundings and the out of doors character of the place have always made student life at Stanford University especially delightful.

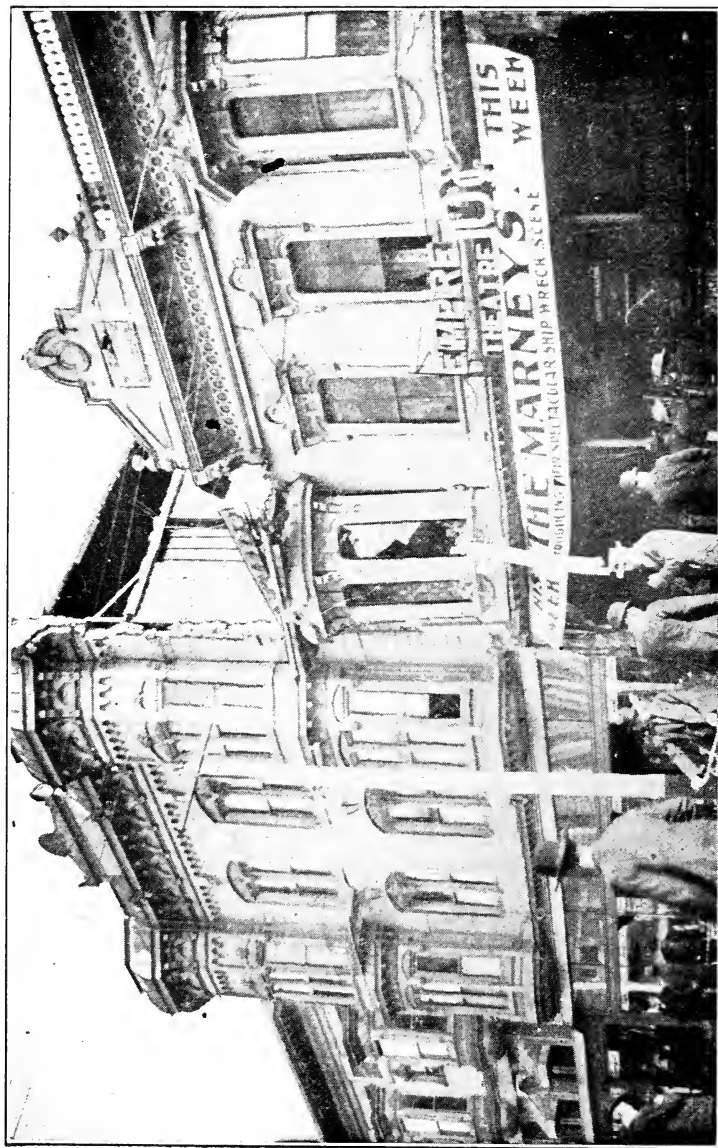
AN OPEN-AIR CHURCH SERVICE, AFTER THE FIRE.







**MEMORIAL CHURCH AT LELAND STANFORD UNIVERSITY.**



SCENE NEAR THE EMPIRE THEATRE AFTER THE EARTH QUAKE

## FIGHTING FLAMES WITHOUT WATER.

There came a moment of sickening despair to the members of the San Francisco Fire Department within five minutes of the great earthquake shock when it was discovered that there was no water. The shock had twisted and torn the great buried mains. Scattered throughout the city was ample apparatus to combat any conflagration that, under ordinary circumstances, might be expected to threaten the city. Manning the equipment there were more than a thousand men, a force skilled in the work of fire-fighting, commanded by men of long experience and proved ability. In a hundred critical moments they had stood, a gallant band, battling against the destroyer while a city looked on, confident that they would prove victor, proud of every man of them. And these same men, despite the fact that no ordinary crisis faced them, rallied from the terror that followed the earthquake, and prepared swiftly to face the task before them. Flames were already at work, the apparatus was on the scene, and then came the revelation that filled not only the firemen, but all of San Francisco, with despair. The panic that came from the earthquake did not exceed that which came in the hearts of this brave band. If ever a man-of-war faced the enemy's ship, and ran in the guns to join in the battle, only to find that neither shot nor powder was on board, those who manned her knew something of the despair that filled the hearts of San Francisco's fire-fighters. They were called upon to fight fire without water. Not a single fire, growing from spark to tiny flame and gradually into a great conflagration, but a score of fires, springing to tremendous extent in an in-

stant, feeding on the shattered structures, which stood, tottering everywhere, as kindling, awaiting the first flash of fire to burst into mountains of flame. There remained only to strive to deprive the flames of fuel. On the prairie this can be accomplished by burning over a wide territory in the path of the fire. Hundreds have saved their lives by this means. In the forests something of the same thing can be accomplished by felling standing timber and burning out the underbrush. These primitive plans are in use all over the country every year to lessen the havoc of fires that devastate millions of acres of woodland and sweep over the plains of the West. Their application in cities is only different in degree. The effort must be to remove fuel from a tract too wide for the flames to leap it and count on permanently stopping the advance by fighting the blaze that finds a foothold in the cleared tract. Here, as in many instances in cities, giant powder and dynamite were used.

The firemen became sappers and miners. They were aided by troops from the government reservation, men of the artillery familiar with high explosives. The tireless work they did must remain among the notable occurrences of the series of tragedies which visited San Francisco. The work of dynamiting began when the fire was in the heart of the business district. Costly buildings were levelled in great numbers. In each instance, however, the onrush of the flames gave too little time. The high wind swept the blaze upward, a hundred feet and more and gave it a forward sweep of more than a thousand feet. To offer successful resistance would have required the clearing of a path fifteen hundred feet long, along the entire front of the fire. This was impossible and the heroic work of the dyn-

ameters went for nothing. Twenty such efforts in as many separate sections were made during the first three days of the fire. Some success was achieved after the main fire had been separated into a score of smaller lines which spread like rays from a sun, into the city. Some of these were temporarily checked but changes in the direction of the wind played pranks with the flames and often a section, apparently saved from the approach in one direction, was reduced to ashes by flames, unguarded against, coming from a new and unexpected quarter. For three days, Wednesday, Thursday, and Friday, this went on. Continued failure seemed to confirm the idea that the entire city would be destroyed.

#### SUCCESS ACHIEVED AT LAST.

It was not until the line of Van Ness avenue was reached on Friday night that success was achieved. Here everything favored the fire-fighters. They got there twenty-four hours in advance of the flames. The avenue is wide. It is lined with splendid homes, most of which have around them considerable open spaces devoted to lawns. Strategically the position could not have been improved upon and the artillerymen went relentlessly to work. All day the thunders of explosions resounded through the city, suggesting fresh disturbances underground to the excited, nerve-racked populace. Palaces shared the general destruction of whatever might provide fuel to the fire. Not only were great charges of dynamite exploded but shot from big guns from the fort were rained against walls and foundations. Block by block the dynamiters left havoc behind them until at midnight they had cleared a tract, five hundred feet wide and nearly a mile long.

### THE LAST STAND.

Here the last stand was made on the West. Every available man was summoned. A few of the broken mains had been repaired in the meantime and the firemen were equipped to fight with hope of success. Like a mighty tidal wave, on and on came the sea of flame. It looked to the men in readiness to give battle that the odds were too great despite the cleared tract, and the water at their command. In the early hours of the morning sparks began falling into the cleared zone and soon after the fire itself reached the east side of Van Ness avenue. The critical hour had come. The army of soldiers and firemen forgot the fatigue of three days of toil with scarce an interval for sleep or rest and began a battle royal. A hundred times flames spang up in the clearing and scores of small blazes got started, even beyond them. But the tremendous energy and courage of the fighters never flagged as they sped from one to another of these outbreaks. One after another was crushed out under the avalanches of water. And so, hour after hour, ceaselessly the struggle went on. Now it seemed that the fire had been vanquished. Then a change in the direction of the wind and the struggle was on again, as desperately as ever, in some new locality. It was human will and endurance against a tireless destroyer. Ten hours of the struggle and man had won. The news went abroad over the city that the western spread of the flames had been permanently stopped at Van Ness avenue. Little by little the force of the wave of flame had become exhausted for lack of fuel; little by little the danger zone retreated in to the district already burned; moment by moment it became more certain that victory was sure. Something of San Francisco would be saved.

**CREDIT FOR WORK ACCOMPLISHED.**

To three men in particular belong the credit for the work accomplished by dynamite.

These men were Rear Admirals Bowman and McCalla's dynamite squad from Mare Island. It was their achievement that finally routed the flames on the line of Van Ness avenue and checked their further advance.

When the burning city seemed doomed to complete destruction and the flames lighted the sky further and further to the west, Admiral McCalla sent a trio of his most trusted men from Mare Island with orders to check the conflagration at any cost of life or property. With them they brought a ton and a half of gun cotton. The terrific power of the explosive was equal to the stubborn determination of the fire.

Captain MacBride was in charge of the squad. Chief Gunner Adamson placed the charges and the third gunner set them off. The thunderous detonations to which the city listened all that dreadful Friday night meant the salvation of many lives and of that fourth of the city that remains intact.

**MILLION IN PROPERTY BLOWN TO DUST.**

One million dollars' worth of property, noble residences and worthless shacks alike was blown to drifting dust, but that destruction broke the fire and sent the flames over their own charred path.

The whole east side of Van Ness avenue, from Golden Gate to Greenwich, was dynamited a block deep, though most of the structures stood as yet untouched by spark or cinder. Not one charge failed. Not one building stood upon its foundations.

Van Ness avenue was laid flat as the earth on the

east side. Every pound of guncotton did its work, and though the ruins burned they burned feebly. From Golden Gate avenue north the fire crossed the wide street in only one place. That was at the Claus Spreckels mansion, near California street. There the flames were writhing up the walls before the dynamite squad could reach it. Yet they made their way to the foundations, carrying their explosives, despite the furnace-like heat. The charge had to be placed so swiftly and the fuse lit in such a hurry that the explosion was not quite successful from the trained view-point of the gunners. But though the walls still stood, it was only an empty victory for the fire, as bare brick and smoking ruins are poor food for flames.

Captain MacBride's dynamite squad realized that a stand was hopeless except in Van Ness avenue. They could have forced their explosives further in the burning section, but not a pound of guncotton could be wasted. The ruined block that met the wide thoroughfare formed a trench through the clustered structures that the conflagration, wild as it was, could not leap. Engines pumping brine through Fort Madison from the bay completed the little work that the guncotton had left to do, but for three days haggard-eyed firemen guarded the flickering ruins.

That desolate waste, straight through the heart of the city, is a mute witness to the most heroic and effective work of the whole calamity. Three men did this, and when their task was over and what stood of the city rested quietly for the first time, they departed as modestly as they had come. They were ordered to save the remnant of San Francisco. They obeyed orders, and Captain MacBride and his two gunners made history on that dreadful night.



## DYNAMITES ONE VICTORY.

This is probably the one great victory over fire ever won by dynamite. It has been used in many great crises. Chicago sought to check the conflagration that swept the city by the use of explosives in the path of the fire: Boston tried it, and Baltimore, more than either, shattered scores of buildings, using, as in San Francisco, both dynamite and giant powder. The fire fighters in all of these cities as the result of their experiences, declared against the practice. In the other instances the dynamite was used in conjunction with every other method, including ample supplies of water. In San Francisco, dynamite was the only available weapon of defense. In the latter instance, with nothing else remaining to be done, there could be no question. But a grave question exists whether, under ordinary circumstances, anything is to be gained by the use of dynamite. Most of the great fire chiefs will agree that where a day's notice of the section to be attacked can be had there is wisdom in trying this method. But unless a tract, 500 to 1000 feet wide, is cleared across the whole front of the fire, experience has taught that nothing is to be accomplished. Buildings that are wrecked by explosives, and are overtaken before a large enough tract can be cleared to effectively impede the fire, only serve to add to the impulse of the flames. Instead of offering unbroken walls there is a gnarled heap of debris. Instantly this is aflame. The opportunity of the fire fighter comes in the first rebuff that the external walls of a building give to the advancing fire. The great structure throws back the flame on fuel already partly consumed and if the resistance given by the firemen can be applied at this moment with all available force, there is the chance that

before further headway can be made the flame, lacking fuel, will be reduced to a degree of intensity within the power of the available water to permanently subdue. The great wall is the friend of the fireman, and it is far better that it be standing when the flames reach it, unless beyond it there can be cleared a tract wider than the flames can cross.

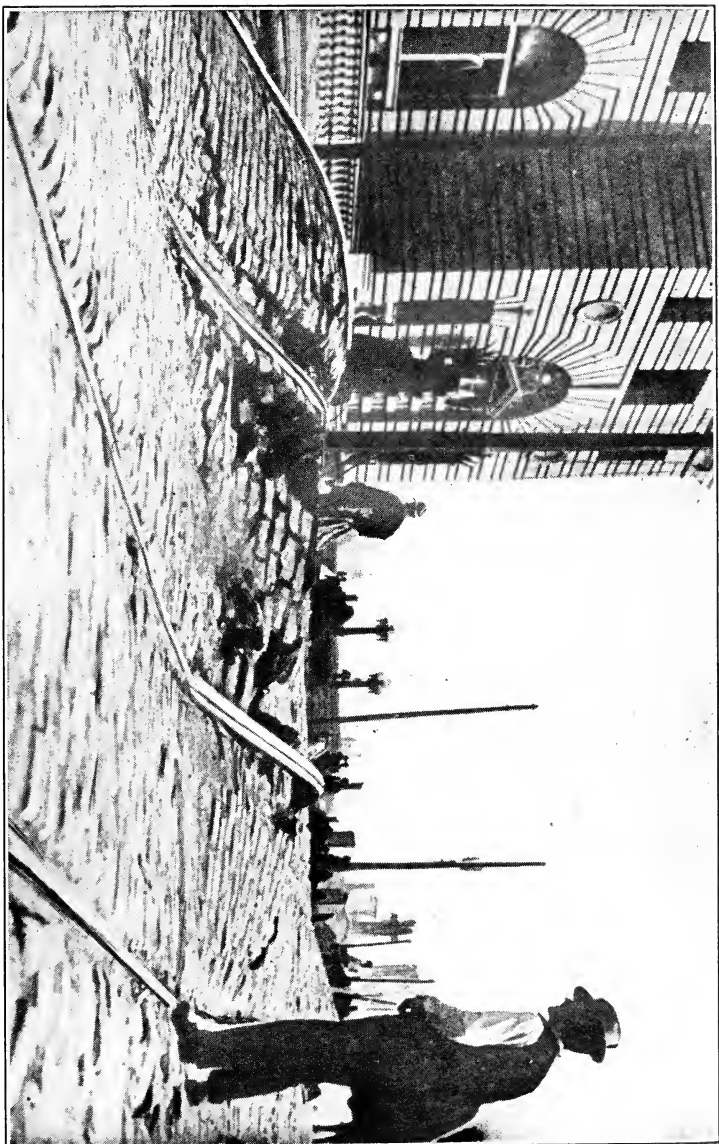
#### FOUGHT FLAMES WITH WINE.

An incident of the fire in the Latin quarter on the slope of Telegraph Hill was the use of wine instead of water in fighting the fire.

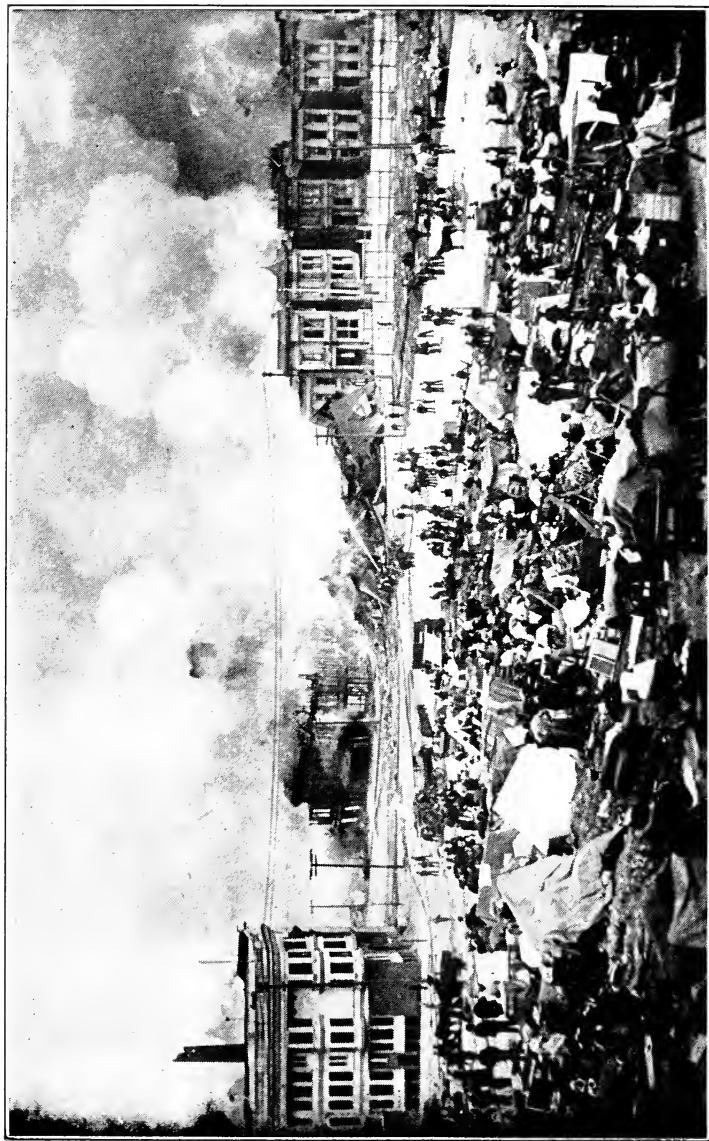
The only available water supply was found in a well dug in early days. At a critical moment the pump suddenly sucked dry and the water in the well was exhausted.

Italian residents crashed in their cellar doors with axes, and, calling for assistance, began rolling out barrels of red wine. The cellars gave forth barrel after barrel until there was fully 500 gallons ready for use. Then barrel heads were smashed in and the bucket brigade turned from water to wine. Sacks were dipped in the wine and used for beating out the fire. Beds were stripped of their blankets and these were soaked in the wine and hung over the exposed portions of the cottages, and men on the roofs drenched the shingles and sides of the house with wine. The wine won and the plucky fire fighters saved their homes.

The Fire Department of San Francisco which was considered one of the best equipped in the country outside of New York, was made up of thirty-three engine companies, seven truck companies, a water tower, a monitor battery, and two fireboats. In addition there was the Underwriters'



SCENE IN FRONT OF THE NEW POST OFFICE—SHOWING STREET CAR TRACK AND STREET  
TORN AND TWISTED BY THE EARTHQUAKE.



Copyright, Judge Co., 1906.  
THE SAN FRANCISCO FIRE ON APRIL 19TH, NEAR JUNCTION  
OF MARKET AND VALENCIA STREETS

Fire Patrol, a company maintained by the fire insurance companies, with a fire-alarm box system similiar to that of New York, with boxes in all of the public buildings and many in private establishments.

#### HOW THE MINT WAS SAVED.

Harold French, an employee of the mint, gave a graphic account of how the flames were successfully fought. He said:

“Nearly \$20,000,000 in coin and bullion are stored in the vaults of the mint and for the preservation of this prize a devoted band of employees, reinforced by regular soldiers, fought until the baffled flames fled to the conquest of blocks of so-called fireproof buildings.

“For seven hours a sea of fire surged around this grand old federal edifice, attacking it on all sides with waves of fierce heat. Its little garrison was cut off from retreat for hours at a time, had such a course been thought of by those on guard. The United States mint was constructed in 1874 of granite and sandstone blocks, massive monoliths, well calculated to resist fire from without. Within, however, were enough inflammable materials to feed a lively conflagration. Iron shutters shielded the lower floors, but the windows of the upper story, on which are located the refinery and assay office, were exposed. Also a tarred roof over the refinery constituted a weak spot in the defense. Tanks of wood and other inflammable material scattered about the roof and upper story were a serious menace.

#### MINT EMPLOYEES WORK RAPIDLY.

“After the fire had swept past the Mission street side and the certainty of its returning from the north became

apparent, Captain of the Watch Laws ordered everything on the roof that would burn thrown into the yard. Soldiers and mint employees worked with utmost haste, throwing great timbers and tank staves into the court.

"Here are located some thirty tanks of blue vitriol, the surfaces of which soon were covered with debris, into which increasing showers of cinders fell. Fortunately, the mint possesses a good well, and Engineer Brady pumped water to the fire fighters assembled on the roof. Of these forty were mint employees, and they were aided by a company of coast artillery.

"As the fire swept up Fifth street the heat increased to a dangerous degree as, one by one, the Metropolitan hall and the historic Lincoln school burst into flame, reinforced by the roaring furnace of the Emporium. On the west the block bounded by Sixth and Market streets on the north gave the gravest concern, for from this quarter the fire was certain to rage in its fury.

"Fanned by a roaring northerly wind, the flames rioted through the structures stretching from the Windsor hotel to the Emma Spreckels' building, sheets of fire 200 feet high licking up the intervening houses on Mint avenue. Augmented by these tinder boxes the blast of fire burst on the northwest corner of the mint like the breath of a second Pelee.

"A few desperate fighters under *ex*-Chief Kennedy of Oakland were driven from between the tottering chimneys, under whose twin terrors they had struggled to the last, throwing buckets of water upon the blazing roof over the refinery. It is largely due to the experience of former Chief Kennedy that this tar covered roof, the weakest spot of all, was saturated with sufficient water to stay the flames.

"When the fire leaped Mint avenue in solid masses of flame the refinery men stuck to their windows as long as the glass remained in the frames. Seventy-five feet of one-inch hose played a slender stream upon the blazing window sill, while the floor was awash with diluted sulphuric acid. Ankle deep in this, soldiers and employees stuck to the floor until the windows were shattered.

#### TONGUE OF FIRE LICKS INNER WALLS.

"With a roar the tongues of fire licked greedily the inner walls. Blinding and suffocating smoke necessitated the abandonment of the hose and the fighters retreated to the floor below. The roar of falling walls, the thunder of bursting blocks of stone, the din of crashing glass, swelled to an unearthly diapason. If thirteen inch shells were crashing against the mint walls the deafening detonations and the force of their impact would scarcely have exceeded the fury of the attack. Down in the deeps where untold wealth is so well safeguarded, artillerymen, ringed with blanket rolls and leaning on their rifles, coughed in the strangling smoke.

"Then came a lull; the walls of brick buildings across the street had all fallen. There was yet a fighting chance, so back to the upper story the fire fighters returned, led by Supt. Leach, who, by example and words, encouraged his men to extinguish the blazing inner woodwork of the refinery.

#### DEFENDERS EXHAUSTED, MINT SAVED.

"The roof was next swept by a hose, cooling the copper sheathed surface until it became passable for wet, acid.

soaked feet. An army officer axe in hand, tore up sections of blazing tar roof, beneath which a stream of water was directed. At length as 4 o'clock drew near, the mint was pronounced out of danger, and a handful of exhausted but exultant employees stumbled out on the hot cobblestones to learn the fate of some of their homes.

"The mint presents a scorched and glassless front on the north and west, and the towering smokestacks are to be torn down, but the building is intact and the plant is unharmed and ready for a resumption of work.



## CARING FOR THREE HUNDRED THOUSAND HOMELESS VICTIMS.

With the fires at San Francisco under control, the feeding of the hungry and sheltering of the homeless became the great problem of the city and military authorities, who had to deal with the terrible situation brought about by earthquake and conflagration. Martial law was proclaimed; strict orders issued to guard against the outbreaks of pestilence; concentration camps were established; an orderly system of food distribution was arranged; temporary shelters were erected in Golden Gate Park; vacant houses that were safe were reopened, and every facility was given by transportation companies for all who cared to do so to leave for the outlying cities and towns that were open to them.

In the great procession of the homeless and destitute to the ferries, on their way out of their ruined city, all distinctions were obliterated in the common misfortune. The long period of terror, anxiety and privation had told on all, and most of them were at the point of exhaustion, and many women fainted. The city of Oakland received the bulk of these, cared for all it could, and those who could be forwarded to other places were sent away on trains.

For the first time in its history, San Francisco has had its taste of martial law. When darkness fell upon the desolated city on Wednesday night, every inhabitant of the houses that were left standing groped about their homes in darkness early in the evening, the survivors of the terrible calamity cooking their suppers on fires built in front of their houses. The wind fanned many of the fires into

threatening blazes, and for a time it looked as if many new fires would be started. But police orders were issued that all fires must be put out, and, with a score of assistants and soldiers, the building of fires in front of houses was summarily suppressed. In all of the homes left standing no lights were allowed to be burned. In places where persons lit their lights contrary to the orders of the police and the militia, citizens formed a safety corps and forced the occupants to extinguish them. The only exception was in the case of hospitals. Soldiers patrolled the streets, and no citizen was allowed to pass from one block to the other except by written permission of the Chief of Police.

Mayor Schmitz has issued the following proclamation, which citizens were instructed to observe :

“Do not be afraid of famine. There will be abundance of food supplied. Do not use any water except for drinking and cooking purposes. Do not light any fires in houses, stoves or fireplaces. Do not use any house closets under any circumstances, but dig earth closets in yards or vacant lots, using, if possible, chloride of lime or some other disinfectant. This is of the greatest importance, and the water supply is only sufficient for drinking and cooking. Do not allow any garbage to remain on the premises—bury it and cover immediately. Pestilence can only be avoided by complying with these regulations.

“You are particularly requested not to enter any business house or dwelling except your own, as you may be mistaken for one of the looters and shot on sight, as the orders are not to arrest, but shoot down any one caught stealing.”

Dr. Vorsanger, chairman of the committee to feed the hungry, reported that everything possible was done to provide food for the populace, and that so far as could be told,

not a hungry person existed in San Francisco Wednesday night. There was no trouble in the distribution of the food nor in procuring it, and in quality and quantity it was satisfactory.

At the Young Men's Christian Association building on Page Street, near Stanyan, and at the Park Lodge, thousands and thousands were fed from morning till night, all kinds of provisions and clothing, meat, vegetables, bread, canned goods, tea and coffee, and the like, were handed out in abundance, not one being turned away. Dr. Vorsanger appealed to all citizens who owned teams of horses to come to the front with them as the committee experienced difficulty in moving the supplies.

Wednesday night, to the hundreds of thousands who endured its horrors, seemed interminable. From every section of San Francisco there had been an exodus throughout the day. Until the sweep of the fire along the water front had interfered, all of the available ferries had been at work carrying the panic stricken people to Oakland and other cities nearby. When it was no longer possible to flee from the city by this means, the tide of humanity turned toward the city parks and the night settled down upon great camps of these refugees, without food, illy clad, shelterless. The rich and the poor mingled there. There were thousands of children. There were the sick, the halt, the blind. Every class of people of the most cosmopolitan city in the country was represented. They were huddled under the makeshift coverings, the more precious of their possessions littered around them. Many had tiny improvised ovens and a few had actual stoves. The city had secured 1400 tents but this was not enough canvas to cover the hundredth part of the throng. The army officials had sup-

plied what tents they could and were undertaking to give food and water to the refugees. In another day the arrangements would be marvelously complete and there would no longer be reason why any should starve. But on this first night of horror there was only chaos. Its memory will linger in the minds of all who had part in it as long as life lasts.

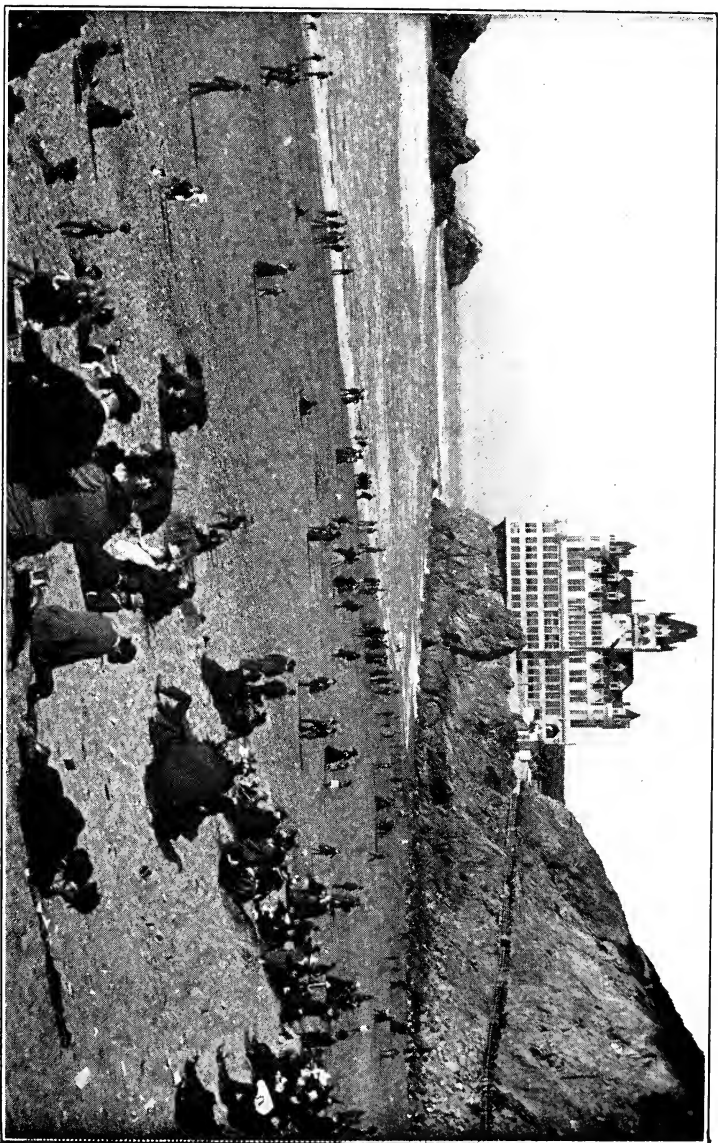
#### SAFE ON THE HILLSIDES.

Thursday morning residents of the hillsides in the central portion of the city were seemingly safe from the roaring furnace that was consuming the business section. They watched the towering flames and speculated as to the extent of the territory that was doomed.

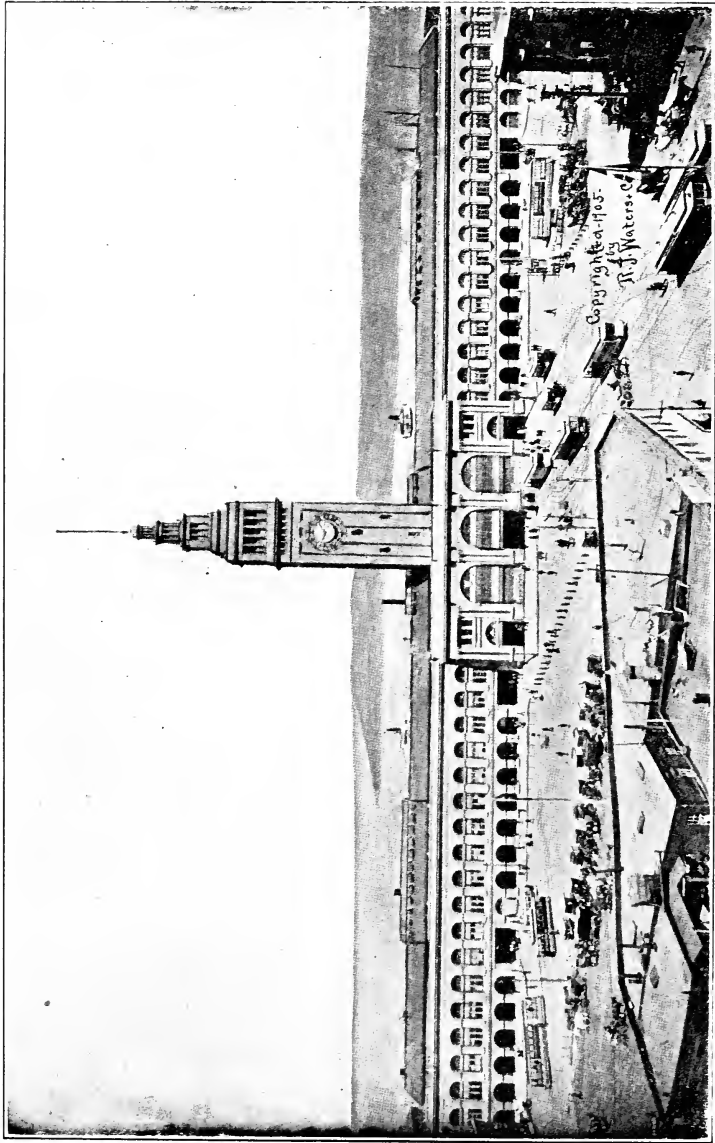
Suddenly there was whispered alarm up and down the long line of watchers, and they hurried away to drag clothing, cooking utensils, and scant provisions through the streets. From Grant Avenue the procession moved westward. Men and women dragged trunks, packed huge bundles of blankets, boxes of provisions—everything. Wagons could not be hired except by paying the most extortionate rates.

But there was no panic. The people were calm, stunned. They seemed not to realize the extent of the calamity. They heard that the city was destroyed so far as business plants were concerned; they told each other in the most natural tone that their residences were destroyed by the flames, but there was no hysteria, no outcry, no criticism.

More than 100,000 homeless persons spent the night in the parks and the city streets outside the district where the fires were raging.



THE CLIFF HOUSE, SAN FRANCISCO, SHOWING SEAL ROCKS AND THE BEACH



THE FERRY HOUSE, SAN FRANCISCO

**STILL BURNING ON THURSDAY.**

The flames continued their advance all day Thursday practically unchecked, and on Thursday night no less than 300,000 persons, or nearly three quarters of the population of San Francisco, spent the night somewhere under the open sky, because their homes were either destroyed or so perilously threatened by the conflagration that it was impossible to remain in them.

Even in the districts not immediately threatened thousands of persons left their homes and fled to the parks and open places. All Wednesday night, an army of men, women, and children walked the streets, headed to the westward. Most of them were bound to the Presidio or Golden Gate Park. Thursday their numbers were trebled. Golden Gate Park and the surrounding hills resembled one vast camping ground. From the Government reservation were sent all the available tents that could be spared. Improvised tents were put up in all the open spaces.

Fireplaces were built in the streets; beds and mattresses dragged from burning houses were scattered about in the open. Not that anybody was sleeping much, but there was a limit to the time that human beings could remain on their feet.

The inhabitants in the hills north of the wrecked Hayes Valley section piled their belongings into express wagons and automobiles, many of them hired at fabulous rates, and hauled them away to the parks or the Presidio. The latter was crowded to the limit of its capacity with refugees.

**DEAD LYING IN THE STREETS.**

Thursday was bright and warm. The sun beat down on the tired workers and rescuers. There was scarcely any water to relieve the suffering. The dead, in many instances,

lay in the streets and the ruins, but the authorities did all in their power to remove the bodies in order that a pestilence might be prevented.

It was necessary repeatedly to move the injured from places where they had sought refuge, for the fire kept increasing with alarming rapidity. Water was the incessant cry of the firemen and the people, but there was only a scant drinking supply.

Already the threat of famine was heard. The following appeal for aid was sent out by Mayor Schmitz to Governor Pardee, and shows the destitute condition of the people and their dire need of food and shelter:

"Send all supplies and tents possible to Golden Gate Park. Have bakeries in small towns bake all the bread they can. We want bedding, food and tents."

The committee of safety consisting of fifty prominent citizens, met with Mayor Schmitz Thursday morning and organized a finance committee, composed of James N. Phelan, F. W. Hellman, Claus Spreckles, J. Downey Harvey, Thomas Magee, J. L. Flood, Wililam Babcock, W. F. Herrin, M. H. DeYoung, and Robert J. Tobin.

Before the meeting had organized, Claus Spreckles gave \$25,000, Rudolph Spreckles \$10,000, Harry Tevis \$10,000, Gordon Blanding \$10,000, Elinor Martin \$5,000, J. L. Flood \$5,000, with a promise of more. These were the earliest gifts to a relief sum that was destined to reach many millions.

#### **SHELTER FOR THE HOMELESS.**

Marcel Cerf, chairman of the committee of refuge for the homeless, had temporary structures erected in Golden Gate Park for the protection of the homeless. Major Mc-



Iver of the United States army laid out a sanitary camp at this point, work on which was rushed as rapidly as lumber could be secured. The camp was under the supervision of an officer of the engineer corps of the United States army, and the chief of the army medical staff was in charge of it as sanitary officer. The conditions among the homeless in the park were excellent, except in the Mission district, where the committee was not able to reach all the people. A sub-committee impressed all vacant buildings, and all deserted houses that, after examination, proved to be safe.

Under the direction of the authorities, committees of the Associate Charities Board set to work to organize the housing facilities of the city. It was determined that owners of houses that had escaped should not be permitted to take full possession of the structures, but that all must be used for the benefit of the entire populace. So a house to house canvass was made with the object of quartering as many people as possible.

At the same time efforts were put under way to get as many vehicles as possible for the distribution of relief supplies. Every wagon and automobile in sight was pressed into service. The lack of teams was met before noon. In many cases individuals came forward and offered the services of their horses and wagons, one man providing the committee with twenty vehicles.

Mayor Schmitz announced that the water company promised a supply of water in the western addition and in the Mission on Friday. Committees were appointed to take charge of the relief of the destitute. Mayor Schmitz appointed his committee of fifty citizens special officers, with full power to represent him and with power to requisition men, supplies, vehicles, and boats for public use.

Every unburned grocery in San Francisco was taken in charge by the authorities, and each family was allowed to buy only a limited supply of food. In many places the police and the troops stood by to prohibit overcharging. General Funston announced that he hoped rations would soon reach the city and the people be supplied from the Presidio.

Bakeries were built within the reservation, and the bread supply therefore did not fail completely.

One hundred and fifty Stanford students traversed the various districts of the city, handing out supplies from door to door. The McNeary Mills sent 5,000 pounds of flour a day from Thursday on.

At best the city never carried more than three days' supply of provisions and food, and with the wholesale districts and warehouses wiped out, this period was shortened. Despite the police and the troops, prices were in many instances more than trebled. A correspondent was obliged to pay 25 cents for a small glass of mineral water in the Hayes Valley district. That part of the city had been laid waste, and not a drop of water was to be had there except bottled mineral water.

#### **OAKLAND HOUSES 50,000 REFUGEES.**

Oakland, on Thursday night, housed and fed probably 50,000 refugees. All day the stream of humanity poured from the ferries, everyone carrying personal baggage and articles saved from the conflagration. Thousands of Chinese men, women, and children, all carrying luggage to the limit of their strength, poured into the limited Chinatown of Oakland.

Thousands of persons besieged the telegraph offices, and the crush became so great that soldiers were stationed

at the doors to keep them in line and allow as many as possible to find standing room at the counters. Every boat from San Francisco took hundreds of refugees carrying luggage and bedding in large quantities. Many women were bare-headed, and all of them were weak from sleeplessness and exposure to the chill air.

Hundreds of these people lined the streets of Oakland, waiting for some one to provide them with shelter. Early on Thursday morning representatives of the Oakland relief committee appeared on the streets and at the railroad stations. Restaurant prices increased from 25 to 100 per cent.

A realty syndicate at once offered Idora Park for the use of those left without shelter by the earthquake. The offer was gratefully accepted by the Police and Fire Departments, and 200 cots were placed in the theater for the use of the refugees. Relief stations were also established at the City Hall and at the various public parks throughout Oakland.

#### **THE SECOND NIGHT IN CAMP.**

The second night of general camping out in the park differed but little from the first, except that the people were on the whole more comfortable. The volunteer fire fighters who had pretty well dropped out of the work, now that the fire had turned, were rested up. There were more blankets and shelter tents, thanks to the troops.

#### **AMPLE MEDICAL SUPPLIES.**

It was inevitable, under the circumstances, that many should fall sick from diseases brought on from exposure. The troops sent all such to the hospital of the Presidio.

There was nothing to show that an epidemic of any kind was threatened. The cases were of pneumonia, acute rheumatism, and the like. It was a fortunate circumstance that the physicians' convention was just over when the earthquake came and that most of the delegates had remained in the city.

The medical department of the Presidio, with the thoughtfulness and foresight which marked the work of the army all through, systematically appropriated the stock of the drug stores as they were threatened by the flames, and the medical supply department at the Presidio was well stocked.

There was a strange change in the appearance of the crowd. On Wednesday they were actively miserable, but still able to weep or to laugh at their hard luck. By Friday they simply were dead of face and eyes. There was no emotion left in them. The soldiers were haggard.

Back with the refugees went a great part of the Cadet Battalion of the University of California. These young men were not a success as police, and General Funston, having no time to train them in their duties, dismissed the corps.

President Jordan telegraphed from Stanford University, offering the aid of a volunteer corps of 150 students, Rabbi Vorsanger, needing the help of young and active men to aid in distributing provisions, accepted the offer. They arrived on Friday and were set at work. Of course, all classes were dismissed at both of the universities. Stanford, where the water supply is ample and the sanitation good, took care of some of the refugees.

Among the people who made San Francisco and who guided its activities hope was reviving. While the actual

refugees were numb and dulled by four days of horror and hardship, hope was in the air again. The citizens, with the fire still burning, were getting ready first to clear the city, restore the water supply and sanitation and make it livable, and then to rebuild. That they will rebuild is accepted without question. The only debate is over ways and means.

#### ALL SOCIAL BARRIERS DOWN.

The common destitution and suffering wiped out all social, financial, and racial distinctions. The man who on Tuesday was a prosperous merchant was occupying with his family a little plot of ground that adjoined the open-air home of a laborer. The white man of California was maintaining friendly relations with his new Chinese and Japanese neighbors. The society belle who, Tuesday night, was a butterfly of fashion at the grand opera performance, was assisting some factory girl in the preparation of humble meals.

Money had little value. The family that had foresight to lay in the largest stock of foodstuffs on the first day of disaster was rated highest in the scale of wealth.

A few of the families who could get willing expressmen were possessors of cooking stoves, but more than 95 per cent. of the refugees did their cooking on little camp fires made of brick or stone. Kitchen utensils that a week before would have been regarded with contempt were articles of high value.

Many of the homeless people were in possession of comfortable clothing and bed covering, but the great bulk of them were in need. The grass was their bed and their daily clothing their only protection against the penetrating fog of the ocean or the chilling dew of the morning.

Fresh meat disappeared on Wednesday morning, and canned foods and breadstuffs were the only victuals in evidence.

A well-known young lady of social position, when asked where she had spent the night, replied:

"On a grave."

Many a San Franciscan spent Thursday night in total ignorance whether his family was alive or dead.

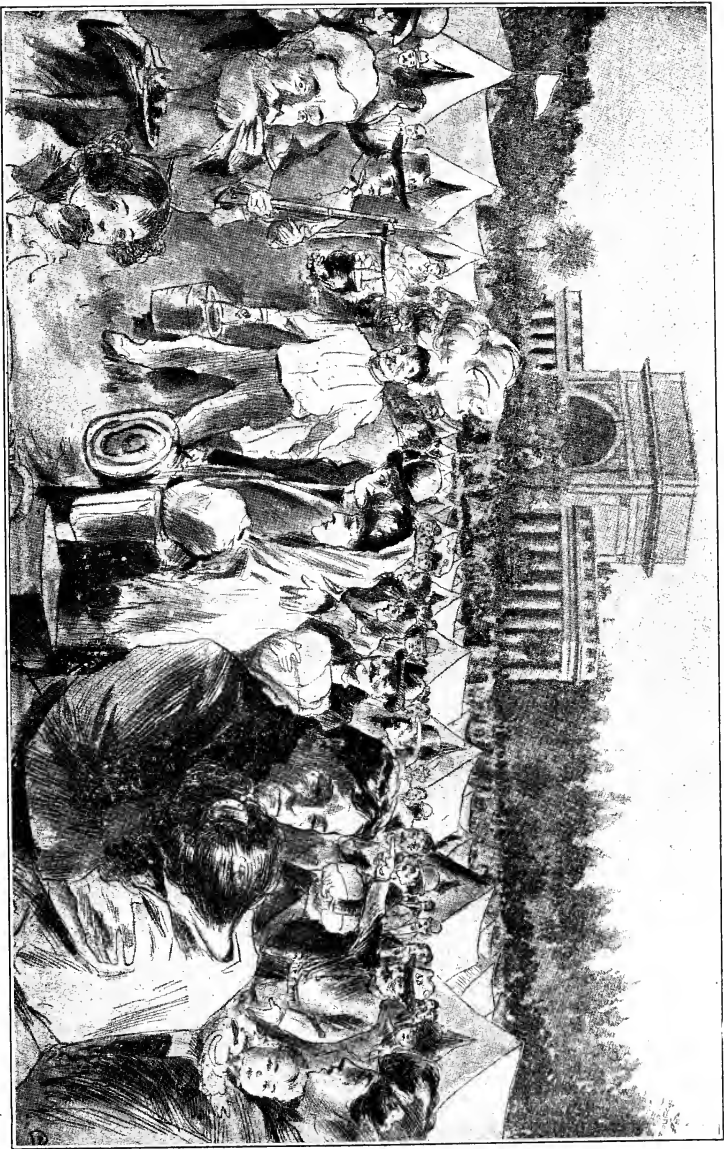
Women and children who had comfortable homes Tuesday night slept on bales of hay, some of them wrapped in flimsy sheets as protection against the chill ocean winds, and others with no covering but the sky.

There was little water in the unburned section of the city, but it was promised by the water company that all that section lying west of Van Ness Avenue would have connections with the water mains before Monday morning. About the only water to be had in the residence section was that which had been conserved by the thoughtful householders who filled bath tubs and every other sort of receptacle.

The Relief Committee was advised that the water supply would be increased just as fast as pipes could be repaired. In some places railway tracks were torn up to facilitate the repairing of mains. Lake Merced supplied about 1,000,000 gallons to Lakeview Post Office and 7,000,000 gallons to San Francisco. There was water enough stored to supply 35,000,000 gallons a day, the amount formerly used.

#### 15,000 SLEEP UNDER THE SKY.

Fully 15,000 persons slept in Golden Gate Park, many without other shelter than the sky. There was ample food



REFUGEES IN GOLDEN GATE PARK, SAN FRANCISCO



SCENES ON ARRIVAL OF FIRST RELIEF TRAIN AT SAN FRANCISCO



to feed the park refugees when morning came. Bread stations were established at the park police station. All day thousands stood in line in the intense heat waiting for food. Similar conditions prevailed in other parks and open places. In all these camps, representatives from Alameda, Oakland, and Berkeley relief committees urged homeless families to leave San Francisco and cross the bay.

Twenty-five thousand persons left San Francisco on Friday, and homeless people kept crossing the bay all night. All who wished to cross the bay were given to understand that they might go to any point in the State on any transportation line free of charge, but that they must not return for some time. This condition was imposed to relieve the food situation. People went to every point around the bay, and even to Los Angeles, San Diego, and other cities in the south, anywhere to get away from the sight of the skeleton walls and smoking ruins of the city.

Oakland received the greatest number of refugees, though Alameda, San Rafael, Vallejo, and every other bay city was crowded. Hundreds of others walked southward on roads leading toward San Mateo, Redwood City, and other places on the west side of the bay.

Berkeley accommodated 2,000 people, and sent word to the authorities that it desired to take care of 4,000 more. Alameda had room for 3,000, and Fresno telegraphed that it wished to provide for 3,000, and asked that that number be sent, for which the Southern Pacific would furnish transportation.

H. E. Breeden, manager of the Standard Oil Company, said that the city of Richmond could take care of 500, and that he would transport them from the Fulton Iron Works.

## PROCESSION OF THE HOMELESS.

The procession began from Golden Gate Park, the Presidio, and the north bay shore line as soon as the word went out that it was safe to cross the burned area toward the ferry building. There were two great processions to the ferry building, one down Market Street, the former great thoroughfare, the other from the Presidio, along the curving shore line of the north bay, thence southward along the water front. Throughout these routes, eight miles long, a continuous flow of humanity dragged its way all day, and far into the night, amidst hundreds of vehicles, from the clumsy garbage cart to the modern automobile.

Almost every person and every vehicle carried luggage. Drivers of vehicles were disregardful of these exhausted, hungry refugees, and drove straight through the crowds. So dazed and deadened to all emotion were many of them that they were bumped aside by carriage wheels or shouldered out of the way by horses.

There were persons with scanty clothing, men in shirt sleeves, and women in under skirts and thin waists. Many had no hats. Some carried children, while others wheeled baby carriages over the debris. It was a strange and weird procession.

At the ferry station there was much confusion. Mingled in an inextricable mass were people of every race and class on earth. Common misfortune and hunger obliterated all distinctions. Chinese lying on pallets of rags, slept near exhausted white women with babies in their arms.

Bedding, household furniture of every description, pet animals and trinkets, luggage and packages of every sort

packed almost every foot of space near the ferry building. Men spread bedding on the pavements and calmly slept the sleep of exhaustion, while all around a bedlam of confusion reigned.

Major McKeever, of the United States Army, was appointed commandant of the camps, and with his staff of assistants on Friday tried to bring system and order out of the chaotic situation. His first thought was to supply food and water, and then to arrange sanitary measures. These throngs of people, crowded elbow to elbow in the open lots and fields, without the conveniences naturally demanded, were threatened with an epidemic of disease, but for the wise precautions speedily observed.

In buildings close to the camps the police stored available foodstuffs and bed clothing for convenient delivery. No distinctions were drawn and only few favors shown.

The grave question was, "How soon would an adequate supply of food arrive from outside points to avert famine and destitution?" There was little food in San Francisco outside of what little each person possessed, and this could not last more than a few days. San Francisco is, geographically, an isolated city. Its nearest large neighbor on the south is Los Angeles, 500 miles away. To the north is Portland, nearly 800 miles distant, and its nearest sister in the great East is Salt Lake City, 1,000 miles away. These cities and all of the less populated nearer towns made sacrifices for the destitute here, but it was to the big cities of the nation that San Francisco looked with an anxious eye for relief. How boundlessly it came is a story worthy of the best traditions of American generosity.

**SCHMITZ TO ROOSEVELT.**

Mayor Schmitz sent the following telegram to President Roosevelt:

“SAN FRANCISCO, April 20.

*“To the President of the United States, Washington:*

“Generous contributions of \$1,000,000 from the Federal Government for relief of destitute citizens received and deeply appreciated. The people overwhelmed by your generosity. All of this money will be used for relief purposes. Property owners determined to rebuild as soon as fire ceases. City will immediately proceed to provide capital for the purpose of reconstructing public buildings, schools, jails, the hospitals, sewers and salt and fresh water systems. The people hope that the Federal Government will at once provide ample appropriations to rebuild all Federal buildings on a scale befitting the new San Francisco. We are determined to restore to the nation its chief port on the Pacific.

“EUGENE E. SCHMITZ, Mayor.”

**SUPPLIES BY TRAINLOADS.**

On Friday night supplies began coming in by the trainload.

At the Presidio military reservation, where probably 50,000 persons camped, affairs were conducted with military precision. Water was plentiful and rations dealt out all day long. The refugees stood patiently in line and there was not a murmur. This characteristic was observable all over the city. The people were brave and patient and the wonderful order preserved by them was of great assistance.

In Golden Gate Park were encamped 200,000 persons.

A huge supply station was established there and provisions dealt out.

Many thousands were camped in vacant lots and squares scattered about the city, and these were the unfortunates that were hard to reach.

Six hundred men from the Ocean Shore railway arrived with wagons and implements to work on the sewer system. Inspectors went from house to house, examining chimneys and issuing permits to build fires.

Clashes of civil and military orders made much trouble, on Saturday and a serious situation arose. The civil authorities gave way, however. A military district was established for police purposes by Mayor Schmitz and General Funston, and the army officer was placed in command.

A conference of Governor Pardee, General Funston, and Mayor Schmitz was held at Fort Mason, and it was agreed that all supplies sent to the city for the relief of the homeless should be placed in the hands of the federal authorities and distributed under the direction of General Funston and under the immediate control of Major Duvall. A depot for the receipt of supplies was established at the Oakland Mole.

There was perfect harmony at the conference and an earnest desire on the part of everyone to co-operate to the fullest extent in order that the relief work might be carried out without any confusion of orders.

This conference served to clear the atmosphere of any impression that there had been any misunderstanding between Mayor Schmitz and General Funston.

Plenty of food was rushed into the city on Saturday, and the work of distribution was put well under way. The

work of making sheltered and sanitary camps and otherwise providing shelter was well advanced.

The fire meantime was burning itself out against the bay front. The ferry house was saved after a desperate fight on the docks.

#### MILITARY IS PLACED IN CHARGE.

The wide separation of General Funston's headquarters at Fort Mason, on the North Beach, and those of Mayor Schmitz in Franklin Hall, at Fillmore and Bush Streets, was the cause of considerable confusion between the authorities. The distance was so great and the needs of the people so urgent that frequently there was no time for consultation between them as to the proper measures to be adopted for relief.

When Mayor Schmitz and General Funston co-operated, however, in the establishment of a military district with the military headquarters at Park Lodge, engineer, sanitary, and signal corps officers were detailed to take charge of various departments.

#### COOKED BREAKFAST IN STREETS.

On Sunday morning, the wind having abated, the regulations were relaxed and many persons breakfasted on food cooked in the open streets. A few bricks or stones gathered into the semblance of a furnace, with a few dry sticks beneath cans or kettles were the improvised kitchen in which the food of the millionaire as well as the humblest workman was prepared.

All through the fine residence section of Pacific Heights

people sat on the sidewalks and took their black coffee, dry bread, crackers, and in some cases bacon and eggs. At the fires before some of the finest houses were many men and women, apparently wealthy, who had nothing to eat. These were supplied by neighbors in better circumstances.

In the parks and along the north beach, or wherever people were camped, the relief stations handed out the food sufficient to relieve the situation. There were probably very few persons who did not receive some sort of food.

The situation was worse at Golden Gate Park, where during the early hours the hungry besieged every place where it was thought food was stored. In some places there was a disposition to overrun the guards.

In the meantime every sort of vehicle obtainable was pressed into service by the authorities, and food supplies sent to every part of the city where people were camped. Bread, milk, coffee, and even more substantial articles were dealt out.

#### A DIFFICULT PROBLEM SOLVED.

The admirable ability shown by General Funston and Mayor Schmitz in providing speedily for the homeless, greatly reduced the extent of the sufferings of the many thousands who were driven for refuge into the city parks. The task was one of tremendous proportions. While the fire was a continued menace the task of subduing it had to share the attention of the authorities with that of the work of succor. But, when on Sunday, the battle against fire had been won, great headway was speedily made toward insuring comfort, ample food and sanitary surroundings for the shelterless victims.

Burying the dead proved a duty of immediate import-

tance, and this work went on with determination and energy wherever there was need.

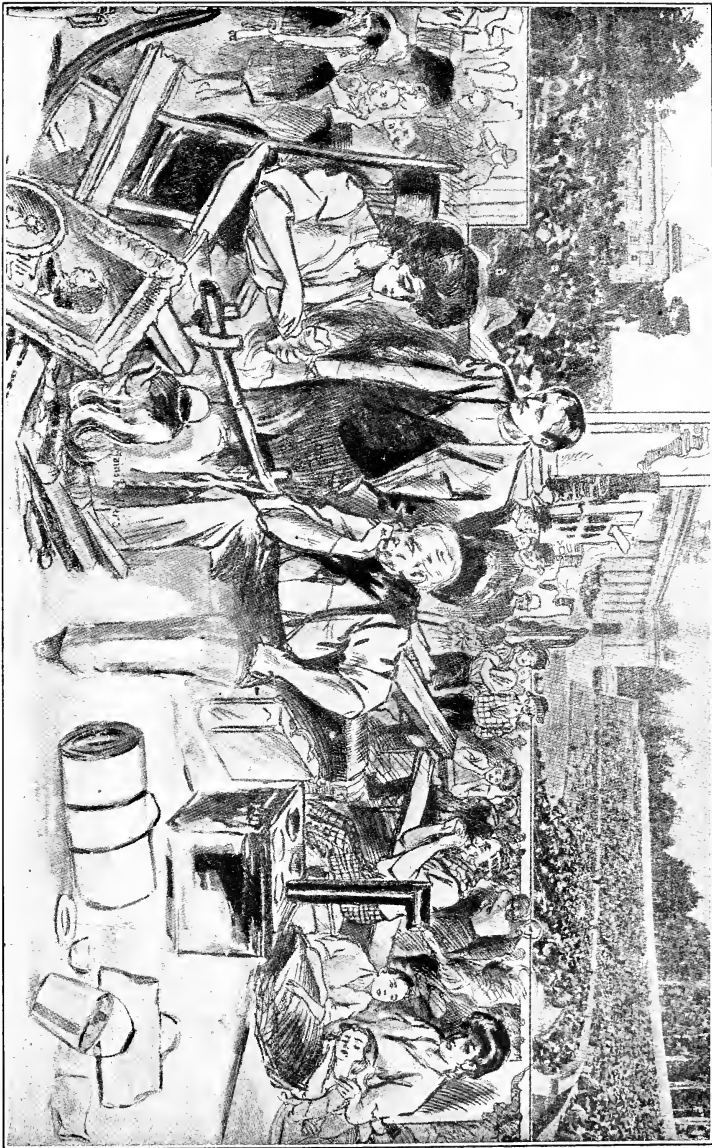
Two hundred bodies found in the Potrero district, south of Shannon street, in the vicinity of the Union Iron Works, were cremated at the Six Mile House by order of Coroner Walsh. So many dead were found in this limited area that cremation was deemed absolutely necessary to prevent disease. The names of some of the dead were learned, but in the majority of cases identification was impossible, owing to the mutilation of the features. A systematic search for bodies of the victims of the earthquake and fire was begun by the coroner and the State Board of Health inspectors. The city was divided into sanitary districts, and squads of searchers were sent out to every quarter. The ruins of the burned buildings in the business and the old residence section had sufficiently cooled to make the search possible.

The body of an infant was found in the center of Union street, near Dupont. There was nothing by which it could be identified. It was learned, however, that a number of persons had camped at this place, and it is presumed that the child died and was left when the party was forced to move. Three bodies were found in the ruins of a house on Harrison Street between First and Second. They had been burned beyond all possibility of identification. They were buried on the north beach.

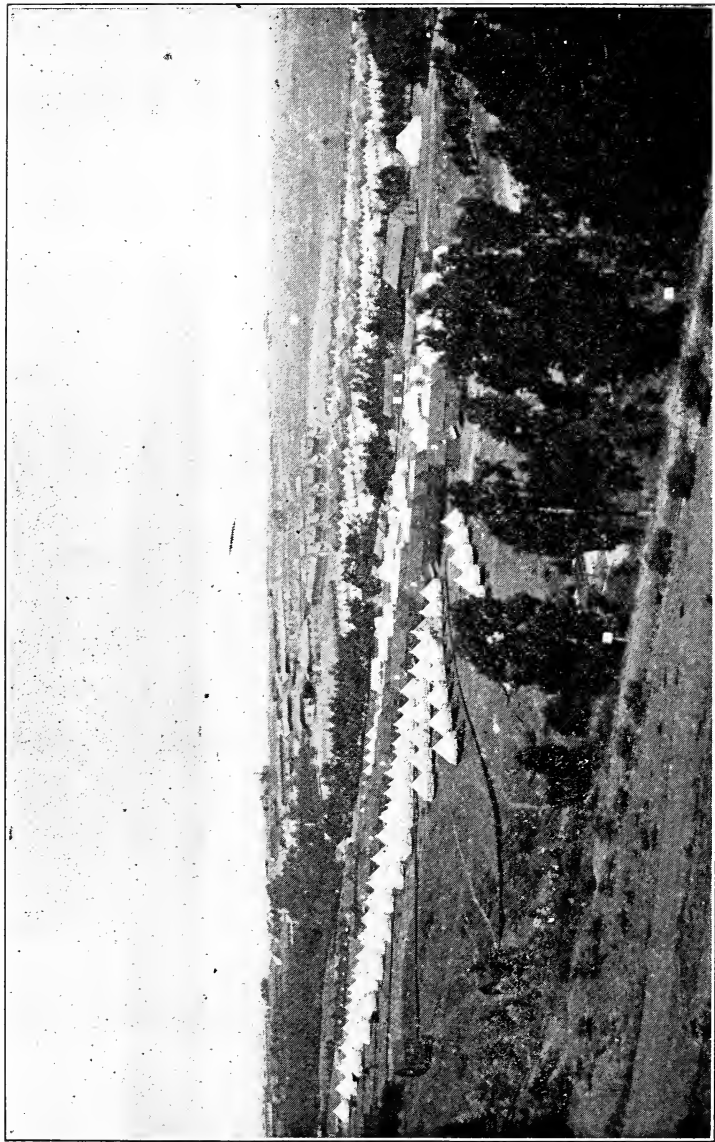
The body of a man was found in the middle of Silver street between Third and Fourth. A bit of burned envelope was found in the pocket of the vest bearing the name "A. Houston."

Reports were made by deputies sent out by the Board of Health of the finding of 23 bodies in various parts of the





VICTIMS OF THE SAN FRANCISCO HORROR, COOKING IN THE OPEN STREET



VOLUNTEERS CAMP AT THE PRESIDIO MILITARY RESERVATION,  
SAN FRANCISCO

city. Few of them could be identified. The bodies were buried in various places and the graves numbered.

The Board of Health reported a very encouraging health condition, considering the circumstances. Sickness was constantly on the decrease. There were very few contagious diseases, and these were being attended at Deer Lodge in Golden Gate Park. Sanitary conditions in the residence district were improved.

Most of the sickness was among the people who were living out of doors, and it was upon these cases that the Board of Health concentrated most of its attention. Hundreds of volunteer doctors, dentists, nurses and helpers joined in the effort to allay suffering. Since the fire started there had been no lack of volunteers for every kind of work.

Major Torrey of the United States Army, and Dr. Foster, of the State Board of Health had charge of the work among the people who were out of doors, and Dr. Hassler was the head of the sanitary work.

Oakland furnished an engineering corps to assist in restoration of the water supply and another to aid in cleansing the streets.

#### **MEDICAL ATTENTION INCREASED.**

Dr. K. A. L. Mackenzie, chief surgeon of the Oregon Railroad and Navigation Company, arrived in charge of 20 physicians, a number of nurses and plenty of hospital supplies. Dr. W. E. Carl, of the Oregon State National Guard, arrived, in addition to the entire Third Hospital Corps of Oregon.

At the emergency hospitals which were quickly established and attended by many physicians almost within a

half hour's notice the only complaint that really existed was the lack of bedding. Though the army and navy were called on for blankets, quilts and the like, the supply furnished by these departments was not enough.

More than 100 physicians and attendants served in the park. New volunteers and inspectors who were appointed by the Board of Health were assigned to districts other than the park, as the physicians were assured that the park emergency hospital was under perfect surveillance.

#### PLENTY OF FOOD AND WATER.

Major Frank V. Keesling, in charge of Golden Gate Park, made this report to General Funston on Friday.

"I beg to advise you that not a case of serious sickness exists in this park. All rumors to the contrary are false and malicious. I will promptly advise you if there is any change, or if anything of a serious nature occurs."

Though the heroic work of the officials in charge of the great task of caring for the homeless saved the victims from some of the direst of possible consequences, there was much misery and suffering. This reached its climax on Sunday evening when a heavy rain set in. Once thoroughly drenched the city could only be described as a hopeless, despairing, miserable mass of stricken humanity. The blinding torrents of rain poured down on the refugees in the scantily sheltered camps and dispelled the buoyancy and hope which marked the tent dwellers after news came that the fire had been quelled. Sitting dully beneath the dripping tents, chocking from the heavy smoke of the tiny extemporized stoves, breathing the damp and reeking air, utterly disconsolate and disheartened, thousands spent

night and day of indescribable privation and hardship.

Carefully nurtured women lay on the soaking ground, pools of water around them. The suffering of the ill and wounded in the hastily thrown up hospitals, too, became intensified. Everywhere were men, women and children, clothed in dripping garments without hope of change, for in practically every case, what they had on was all they had in the world. Colds and pneumonia made their appearance to add to the misery and the grim spectre of contagion stalked amid the wretched throngs.

The rain began at midnight on Saturday, a few hours before the beginning of the fifth day since the disaster befell. In despair, thousands adopted the philosophy that all nature had turned upon the once splendid city of San Francisco and its people. The brave talk of a new city speedily rising was no longer heard. Indeed, the new despair, after uplifted hope and faith which came with the general improvement of Saturday, was one of the really great tragedies of this long series of unprecedented horrors. Now there would be a downpour of tremendous force. Then a chilling drizzle would add a new form of misery. Again torrent of rain. So through the Sabbath, a day which will not be forgotten by any of the 300,000 who lived through it in San Francisco's camps. The effect could be seen in the crowds which gathered to watch the relief trains from the East come in. On Saturday, smiles and cheers were the greetings of the train crews. On Sunday, silence, a profound, melancholy silence had taken the place of the cheers. The people looked on with the indifference of utter despair.

The sanitation problem, too, became doubly serious. The rain laden atmosphere blanketed the camps. The brisk, fresh breezes of the preceding days were a mighty

factor in safeguarding health. The odors lingered under the pall of cloud and were responsible for hundreds of cases of illness. Frantic efforts were begun to cope with this great problem. Sanitary officers commanded the services of every available man, and every wagon and cart available was set to work carrying debris and offal beyond the confines of the camp. Everything that human power could do, was done. But the problem was almost beyond solution even under the best of circumstances. With the infinite difficulties to be overcome there is little wonder that the results of the effort were far from satisfactory to the men who labored so valiantly against an invasion of disease, born of the great disaster. But while the city lay in a stupor of misery, the work of relief throughout the camps and in the city, itself, never faltered. Fifty-two food distributing points were established and from these tons of provisions of every kind went out to the people.

#### THE RAIN CLIMAX TO MISERY.

The rain, with all its attendant discomforts, really caused more utter misery than the devastating flames. No one who has not experienced the heavy downpours of the coast can realize the agonies suffered by the refugees. Water was everywhere and where, but a few days before, drops were sought eagerly by parched throats, there ran rivers and the stricken thousands were as busily avoiding the water as they had been frenzied in finding it. While the fire raged, men fought without thought of self and peril and toil kept from their minds a full realization of what was happening and the awful extent of the disaster to their city. At the very moment when there was time to stop and

think, when the mental reaction was inevitable, then came the rain, and the scene, heartrending in any guise, seemed an hundredfold more dreadful under these conditions. There is excuse if in those Sunday hours San Franciscans utterly gave way to despair. All the camps were little more than pools of water. Horses straining with loaded provision wagons slipped in the treacherous mud, soggy tents, dripping inmates, everywhere a murky blanket of mingled smoke and moisture; these were a trinity of misery and wretchedness.

The people, in utter abandon, seemed in thousands of cases to be overcome by stupor. Men and women were to be seen crowded about the tiny fires in their tents, coughing and choking from the heavy smoke. Nervous energy seemed to have vanished. Bitterness, complaining, sullen anger, had succeeded bravery and faith and hope.

In almost every tent a fire was burning. Coffee, half heated, was drunk without enjoyment, soggy food eaten methodically. Tobacco, which was the sole sustainer of thousands of men until relief came, had lost its flavor. Nothing, save the shining of the sun, could help.

And here is one of the remarkable things about the people who withstood so bravely the calamity. While there was a call for action they responded magnificently, but with this dull, uneventful day, they almost gave up hope.

Thousands of delicately nurtured women suffered indescribable sufferings; thousands of strong men broke down completely. Nothing could be done to aid them and it was the most hopeless day San Francisco had ever endured.

#### SUFFERING IN HOSPITALS.

In the hospitals the suffering was horrible. Whatever

could be had was sent to these institutions and given women and children. The homeless were housed in chill and cheerless churches, in garages and barns and those who had saved their homes were called upon to take care of the unfortunates exposed to the storm. With few exceptions those who had homes responded readily to the new call made upon them and where they did not, the butt ends of rifles quickly forced a way through inhospitable doors. While the storm added to the difficulties of the general committee, especially of those having in charge the care of the sick, the sanitation of the city and the housing of the homeless, it was a spur to even greater efforts to bring order out of the chaos prevailing. Regular shelter tents were provided as well as cots standing off the ground. It was realized that these provisions were imperative, as much so as the providing of food.

The rain started at midnight and until 3 o'clock in the morning it poured and drizzled at intervals, while a high wind added a melancholy accompaniment, howling and sighing about the buildings in the burned district. For three hours it ceased and hope was beginning to revive, but as the sun sent forth its first warm rays, they were swallowed in the dull clouds again and the blinding sheets came down once more. All through the day it continued at intervals.

#### **MAN PLEADS FOR CHILDREN.**

One instance of suffering tells all the pitiful stories.

About 4 o'clock, when the rain had been falling heavily for an hour, a middle-aged man, white faced in his distress and fatigue, appeared at the headquarters of the General Committee. He had walked two miles from his camping



place in the park to make an appeal for his suffering wife and little ones. As he told of their distress, tears coursed down his cheeks. His wife and children were, he said, without covering other than a sheeting overhead, and were lying on the naked ground, their bodies protected only by a quilt and blanket, which of his household bedding were all he had managed to save. These had quickly been soaked and while unwilling to complain on his own account, he could not bear to listen to the wails of his loved ones and had tramped all the way from his camping place to the committee headquarters in the hope that there he might find some means of getting his family under shelter.

The condition of the 5,000 persons encamped in Jefferson Square was terrible. Not more than five per cent. had even an army tent, and makeshifts were constructed of carpets, bed sheets and every imaginable substance. They were inadequate to keep out the heavy rain. Houses were requisitioned for these people as fast as possible.

The St. Paul Lutheran Church, near Jefferson Square, was utilized as an emergency hospital. In the main auditorium about forty-five patients were lying on mattresses spread on the floor. There were nineteen physicians and twenty-nine nurses employed. The patients were mostly suffering from exhaustion, nervous strain or slight wounds.

At Fort Mason there was little misery on account of the cold rain. About 8,000 persons encamped there and on account of the sandy and sloping ground sanitation was not bad. Food was plentiful and of a fair variety. The health of the refugees at this place was as good as could be expected under the circumstances.

**SYSTEM IN FEEDING HOMELESS.**

Homeless people were fed in a systematic manner. From the water front, where the boat loads of provisions docked, there was an endless procession of carts and drays carrying food to the scores of sub-stations established throughout the city and the parks. At these stations food and drink, comprising bread, prepared meats and canned goods, milk and a limited amount of hot coffee and even fruit were served to all those who applied. About 1500 tons of provisions were moved daily from the water front.

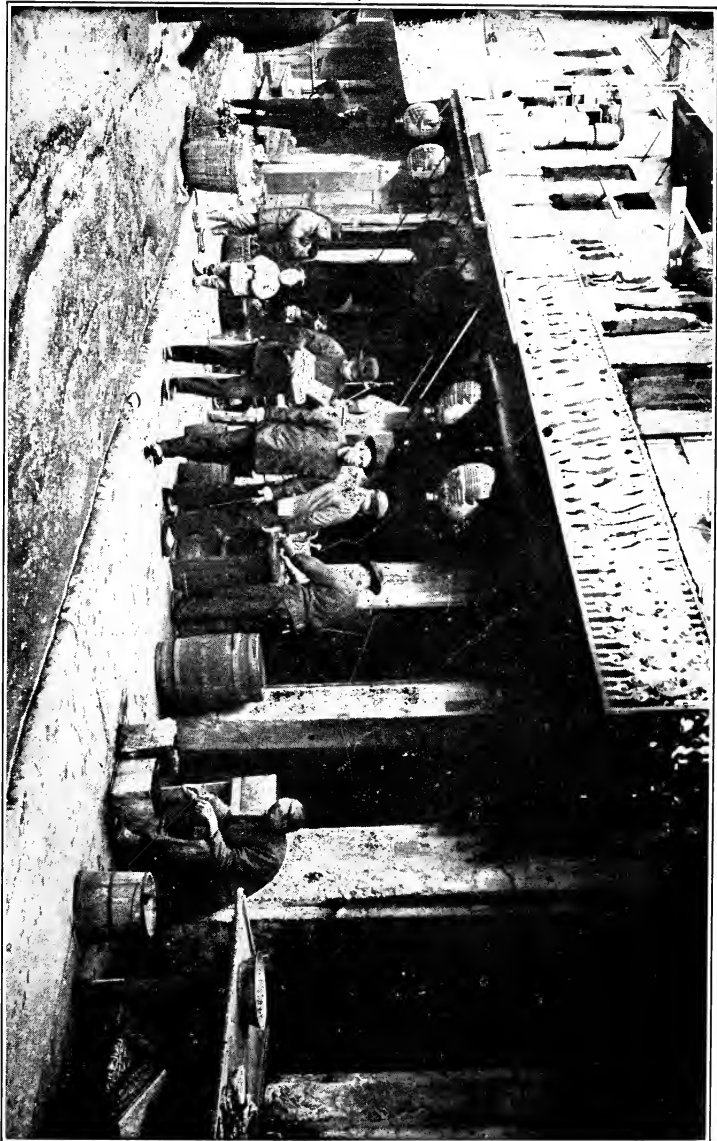
The Committee on Feeding the Hungry reported the most satisfactory progress in the huge task and established fifty-two places, where the hungry secured food.

The Committee of the Whole designated a sub-committee of seven which directed the relief work so far as food was concerned. Dr. Vorsanger was chairman. The headquarters of the bureau were in the City Hall at Bush and Fillmore Streets.

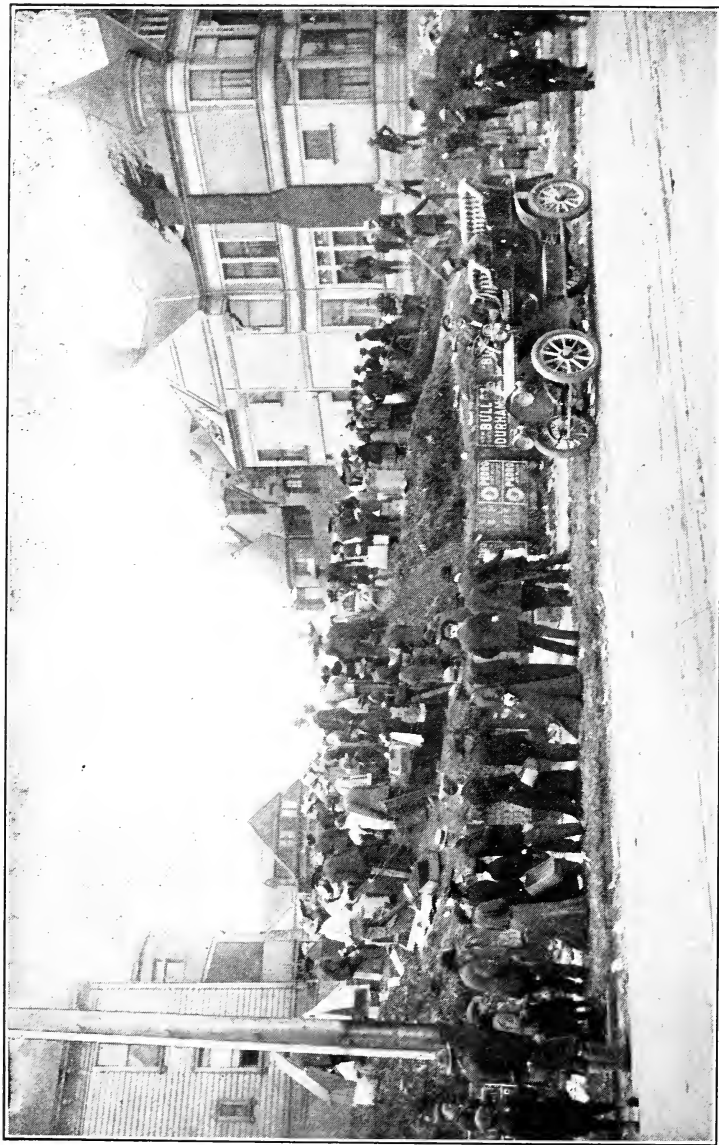
From all points, news of approaching relief trains came in, and by Monday night sufficient provisions had accumulated at the Oakland pier to supply the needs of the city for more than a week. Plain food of every description was plentiful and luxuries began to arrive. A coffee famine was threatened, but fresh consignments of this stimulant were distributed from almost every food depot.

There was an abundance of meats for stewing, though all the finer cuts were used at the hospitals. Immense cattle trains rolled northward from the prairies of the southwest and chickens and eggs came from nearby towns. The most pressing need was for vegetables.

The lines of applicants at the various food stations



A FISH ALLEY IN CHINATOWN, SAN FRANCISCO



THE BREAD LINE

were blocks long. Every one received rations for a single person as many times a day as he asked. Volunteer distributors issued the provisions under military protection.

The committee secured two main warehouses, and all provisions, as they reached the piers, were carted there. These were the J. A. Folger Building, Spear and Howard Streets, which stands intact, though in the burned area, and the Moulder Schoolhouse, Page and Gough Street, which supplied that part of the residence quarter spared by the conflagration. Depots for Government supplies were at the Presidio, the Folsom Street dock and Fort Mason.

Large supplies of blankets, tentings and other material, to provide coverings for those who were scantily supplied, reached the supply stations rapidly. Barracks were completed at several points and in these many people found comfort and shelter against the inclemencies of the weather. The situation in the congested camps, such as Golden Gate Park and the various public squares through the city, was considerably relieved by the departure of many people for points on the other side of the bay, after Sunday.

#### **CHINESE SUFFER SEVERELY.**

Among the refugees suffering the most severely were the Chinese. These fled from their caverns in the winding Chinatown with the first shock of the quake and the soldiers afterwards refused to let any enter the blazing district. Consequently few carried away any of their possessions, and as the holdings of the wealthier class were almost entirely in real estate or in their business places and homes, all are destitute.

Although provided for in the distribution of food, they could obtain no shelter. For the first two days all racial

distinctions were forgotten in the wild scramble for safety, but when order had been somewhat restored the Californian's natural antipathy for the Chinaman reasserted itself.

Even before the fire they were restricted almost entirely to the narrow confines of Chinatown. At first they were scarcely remembered in the matter of shelter, but a permanent sanitary camp for them was finally established in the blocks bounded by Franklin and Octavia, Chestnut and Bay Streets. It was laid out and constructed under the direction of the army engineers and the Government supplied 4000 shelter tents for the purpose.

#### RACE TRACK A CAMP.

Shellmound Park, at Emeryville, a few miles outside the city, and the race track, were transformed into one big camp for refugees. The cooks of the race track and restaurants worked night and day providing food for the homeless who found shelter in the sheds and some of the track barns. Hundreds of track followers were shipped from Emeryville to outside points, and the horsemen who saved any money divided with the less fortunate. John Lyons, a bookmaker drew \$7000 from one of the San Francisco banks before it closed and provided living expenses for many of the track followers left penniless.

For the first time since the earthquake, the refugees had plenty of substantial food on Sunday. They were no longer obliged to subsist upon bread and canned stuff entirely, as they had been during the previous days of their trying experiences, but were given hot coffee, canned meats and even cakes and oranges. Oranges came in plentiful supply from Southern California, and the sight of Cali-

California's famous product was everywhere hailed with delight.

The gaunt spectre of starvation was banished by the magnificent response of the people of California in particular and by the entire nation in general to the appeals that went out for assistance. Food by the carload and boatload poured into Oakland on Monday, in sufficient quantities to overwhelm the committees which had in charge its distribution. So great was the volume of foodstuffs brought into the general depot at Oakland Mole that the general committee made an appeal for skilled labor in handling of these supplies. Grocers, butchers and commission men were requested to secure men familiar with the handling of foodstuffs in order that the distribution at the scores of stations established might go on without confusion.

It must not be understood by the charitable people of the country that there was a surfeit of food for the sufferers. While the supply was abundant, it will be well for the public to remember that the homeless thousands had to be fed and cared for by the organized relief committee for an indefinite period. It was desired, therefore, that contributions be continued everywhere until the people who had been rendered helpless and destitute by the city's misfortune could care for themselves.

There was no danger of a water famine, but the scarcity of water was causing great inconvenience. About two-thirds of the section of the city which was not burned was supplied with sufficient water for pressing domestic needs, but, of course, there was not enough to be had for fire-fighting purposes. Because of this fact, the most stringent orders were issued by the military and civil au-

thorities that no fires should be built within any house, and no lights, not even a candle light, could be shown at night in the houses. All cooking had to be done on the sidewalks or in the open streets and in daylight.

The banks, housed in tents or in modern buildings which were seared but not destroyed by the fire, opened for business on Monday. The loss of their vaults was slight; they were ready to pay all reasonable claims. There had been a shortage of ready money. People of means, unable to realize on checks, had been as poor as the poorest.

#### WORK OF RELIEF SOON UNDER WAY.

The work of feeding the hungry and sheltering the homeless on Thursday, received more attention. The great emergency of stopping the spread of the fire having been met, there was more opportunity for a survey of the situation. Just as soon as the outside world had learned of the calamity it had thought of the prospects of suffering, on the part of the unfortunates who had been thrust out on the street without food or shelter.

Misfortune has its compensation, for it lets down the barriers of humanity. The man who may appear cold and heartless in the ordinary course of business is likely to reveal a warmth of sympathy and a heart as true as steel when emergency arises. Enemies lay aside their bitterness and work for the common cause.

This was the case in San Francisco. Oakland, across the bay, and the little cities, villages and communities near by immediately opened their hearts and their purses at the first news of the calamity.

Scarcely had the roar and rumble of the earthquake



died away and the fire started in San Francisco when Oakland, herself, a heavy sufferer from the earthquake, began to ship food supplies by boat to San Francisco.

Other supplies began to come from all directions. Mayor Eugene Schmitz rose to the occasion and appointed his bitter enemy, James D. Phelan, chairman of the General Committee, having the situation in charge. Competent men of prominence in every line of activity were named to take a hand in the sheltering of the homeless and the feeding of the hungry.

General Funston, with the large supplies stored in this vicinity for the army, and with a superb organization under him, took charge of the distribution and the maintenance of order. Neighborhood relief stations sprang up like mushrooms, and they soon learned that general commissions for this purpose had been organized, so they co-operated.

#### 300,000 TO BE FED.

The great rush was at the parks and on the ocean beach. The spacious Presidio and beautiful Golden Gate Park sheltered nearly three hundred thousand persons. Rations to feed them were distributed Thursday and Friday. By Saturday the work of relief was well organized and was extended to every district in the city. Headquarters for the municipal government and for the different commissions were established in Franklin Hall and vicinity. Franklin Hall is an ancient frame structure in Fillmore Street, near Bush. It quickly became the active centre of the city, while Fillmore Street, an unpretentious thoroughfare of small stores, was transformed into a temporary successor to Market Street. Temporary offices

of the newspapers of the city and the various business houses were placed in tiny rooms, in barns or in old shacks all along the streets. Information bureaus were established here, so people in San Francisco might register to let their inquiring friends know of their whereabouts.

The main thought was for food and shelter. The people of San Francisco, a city of 345,000 persons, were camped in the streets in the public squares, on the military reservations and in the park. Wednesday night there were few in San Francisco who remained indoors. Thursday night the situation was much the same, although a few well to do found shelter with friends beyond the immediate line of danger. Friday, the more permanent relief camps began to be established. Out of the endangered and destroyed districts the people had poured to watch the progress of the fire. Some had waited too long and had retained only the scanty clothes on their bodies. Women, escaping hastily from endangered buildings, welcomed the men's overalls which were supplied them to protect them from the chilled breezes which crept under the scanty garments against their unprotected limbs. Children were in their night clothes; men were little better off. The more provident and far-seeing had gathered together bedding and outer garments, but a large majority had seized only trinkets. Many a man was observed while the fire was raging onward wheeling a couch, pausing occasionally to rest a while upon it, and then dragging it on, while scores were to be observed hauling trunks by means of ropes, stopping frequently to rest before resuming their toilsome march.

As soon as they had dragged their lares and penates to an open lot, there they sat themselves, Micawber-like, to await what might turn up next. Procuring a pole here

and there, they spread an occasional blanket over their household goods, stuck up a card with pencilled information as to who they were and set out to look for food. This was not a difficult undertaking. The offerings of the people in the nation had begun to arrive. Soon after the earthquake some avaricious butchers and grocers had sought to get exorbitant prices, relying on the needs of the populace. They soon desisted. The military seized the dealers' stores and they were punished as martial law might require.

#### AMERICAN "NERVE" TO THE FORE.

Any one who doubts that the Americans are a cheerful race should have seen the spirit displayed throughout this disaster. If any one maintained that women are the weaker sex he should have watched their action during the hour of trouble. Great danger was at hand—long hours of vigil were near.

It was a test of endurance, mentally and physically. Many men there were who rose to the situation, but the women bore the physical burdens. There were some women who yielded to their fears, but the vast majority faced peril and even death with calmness and philosophy. While the men were discussing the fire the women were packing up the household belongings in a sheet and were carrying the heavy bundles down the stairs and out along the streets. They were looking after the children; they were planning for the future.

When night came and it was necessary to keep an eye on the progress of the fire, it was the women who said, "You lie down and go to sleep and I'll watch," and when the crowds had reached the little places of refuge, it was

the women who quieted and reassured the children, who straightened out the few remaining pieces of household furniture the best they could, also suggested the sticking up of a blanket on poles to cover them, and who declared that so far as they were concerned they did not care so long as they were alive.

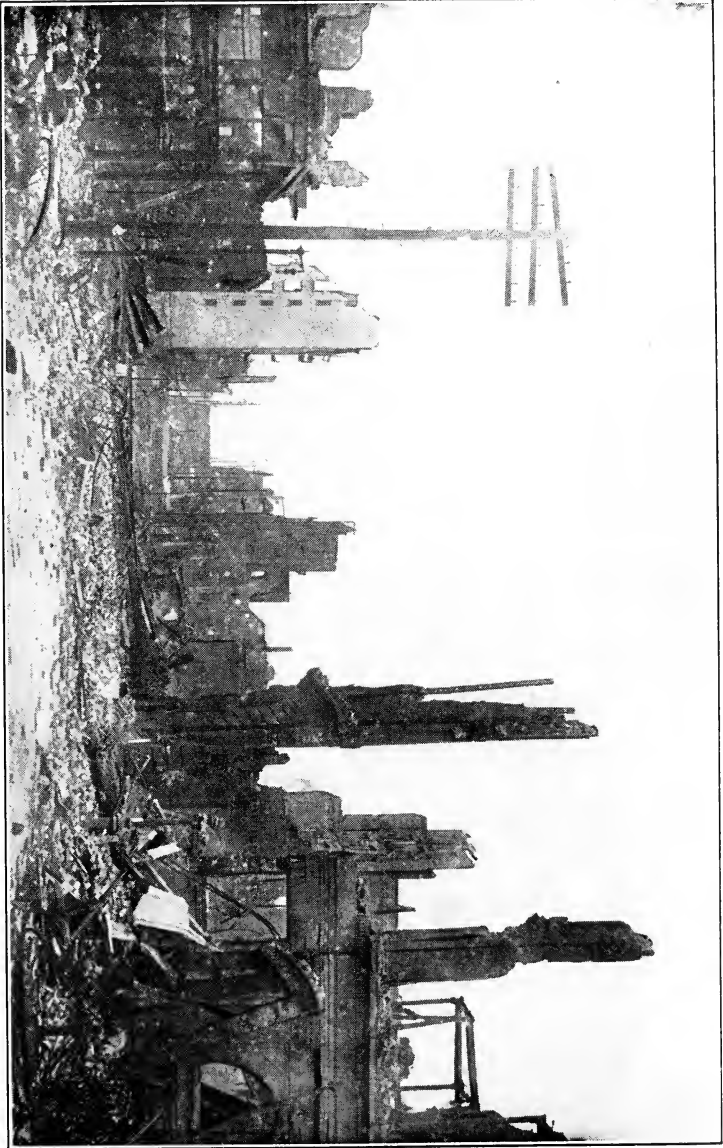
Never were there more picturesque camps than those which gave some sort of shelter to the people driven from their homes.

The population of the camps was not confined to the poor. More than one man whose wealth runs into the hundreds of thousands or more was glad to be under a tree to have his family near the great bulk of the middle or the poorer classes.

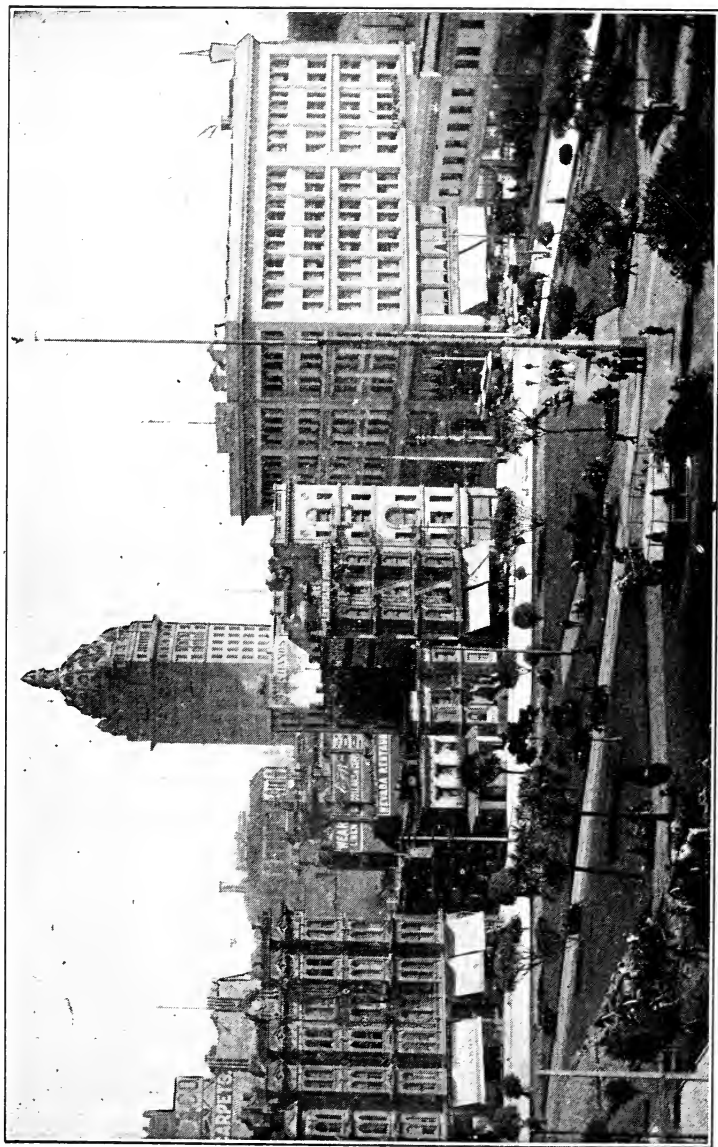
The principal camps were in the military reservations in the Presidio, in picturesque Golden Gate Park and in Jefferson Square. Military tents were issued by the government and made to go as far as they could, the remainder being left to the resources of the individuals.

Some lay under the trees without any covering and without anything between them and the ground. Nearly all, however, were able to procure at least a blanket to lie on and a piece of cloth to put above them. Billboards were torn to pieces and used for temporary shacks and sometimes they were raised on poles. Again two boards were set up like wedged tents. Anything available was used for shelter.

The people without houses were not the only campers, however, because owing to the conditions of the chimneys stringent orders had been given prohibiting fires in the houses.



UNION SQUARE, SAN FRANCISCO, AFTER THE FIRE.



UNION SQUARE, SAN FRANCISCO

**CHEERFUL IN MISFORTUNE.**

Along every street in the city, even Market Street, might be seen rows of stoves which had been moved from the houses or of piles of brick arranged with ovens. About these men and women bent, busily engaged in cooking their meals.

Nearly every one seemed to take it as a great deal of a lark. Cheery calls from neighbor to neighbor could be heard by any passerby, and the housewives appeared to take as much pleasure in the way they fried bacon on a piece of tin over brick ovens as they would ordinarily in giving the richest heat and flavor to an entrée in a course dinner. Here again, all class distinctions were swept away.

No food was to be had except what was issued by the relief corps. The supply stations were scattered all over the city and before the end of time of stress there were between one hundred and fifty and two hundred of them. Morning, noon and night, long lines could be seen standing in front of each station. There was food and plenty, though it might be simple and a person might have to wait a long time for it.

There was food for the children, for the man who stood ahead of the man with the high silk hat and the frock coat, for the man who, a week before, could draw his check for \$100,000 and get it cashed, but who now stood in line to get his loaf of bread and can of corned beef.

In these days nobody knew how much he really was worth. A man might have had a million a day before the earthquake and be hurrying around trying to find two dollars in cash to carry himself and family along. Checks

were worthless; the best of drafts could not be cashed; the banks were closed by fire, and throughout California the Governor was declaring a legal holiday from day to day to give the financial institutions a chance to get their bearings.

One man went three days with a solitary hundred dollar bill unable to get change. Merchants declined credit to their best customers when by chance they had anything to sell. Ready cash was the only thing with which to purchase any article, and even this could not buy food. The hungry could satisfy themselves in only one way and that was to go stand in line in every relief station. In that way plenty could be obtained.

Supplies of food afforded the least of the trouble with the twenty millions of dollars and more subscribed by the nation and with the carloads of food which were rushed on through passenger schedules from all directions.

The feat of feeding the 300,000, was performed with amazing efficiency, and will remain a bright page in the history of San Francisco's tragedy.

#### THE COMMITTEE OF SAFETY.

The following is the list of the members of the Committee of Safety named by Mayor Schmitz, to whom San Francisco's 300,000 homeless ones owe a debt of gratitude:

James D. Phelan, Herbert Law, Thomas Magee, Charles Fee, W. P. Herrin, Thornwell Mul'alley, Garret W. McEnerney, W. H. Leahy, J. Downey Harvey, Jeremiah Dinan, John J. Mahoney, Henry T. Scott, I. W. Hellman, George A. Knight, I. Steinhart, S. G. Murphy, Homer King, Frank Anderson, W. J. Bartnett, John Martin, Allan



Pollock, Mark Gerstle, H. V. Ramsdell, W. G. Harrison, R. A. Crothers, Paul Cowles, M. H. DeYoung, Claus Spreckles, Rudolph Spreckles, C. W. Fay, John McNaught, Dent Robert, Thomas Garrett, Frank Shea, James Shea Robert Pisis, T. P. Woodward, Howard Holmes, George Dillman, J. B. Rogers, David Rich, H. T. Cresswell, J. A. Howell, Frank Maestretti, Clem Tobin, George Toumey, E. D. Pond, George A. Newhall and William Watson.



## SURVIVORS TELL HEARTRENDING TALES.

Fully 450,000 persons were in San Francisco on the morning of April 18, when the earthquake marked the opening of one of the world's greatest tragedies. Its story will never be told adequately from the standpoint of these hundreds of thousands as a whole. It will ever be a matter of individuals. To each the event is a separate event. To those who would know and appreciate the many tragic and dramatic aspects of the catastrophe must learn as many as possible of these individual stories. Some have not the power of graphic description. Amid so many thousands, fortunately for the inquirer there were hundreds possessing this rare faculty, in some degree. We will go to some of these to get glimpses, at least, of our story.

Four residents of Los Angeles, two men and two women, who were thrown together by the earthquake and for two days and a night walked the streets and hills of San Francisco, were Dr. Earnest W. Fleming, Oliver W. Posey, Mrs. Francis Winter, and Miss Bessie Marley. They were strangers till they met in front of the Palace Hotel on Wednesday morning, after the earthquake.

They returned to their homes in Los Angeles, feet swollen and bruised from miles of walking over ragged, broken streets, and with flesh seared and blistered from cinder and flame. The women remained in a local hotel all evening, prostrated. Mr. Posey went directly home, but Dr. Fleming, unkempt and disheveled, went to the Chamber of Commerce to give suggestions for relief.

It was on his advice that the Relief Committee made purchases of linen and bandages to send north. He said thousands were suffering from burns.

## AWOKE IN GROANING BUILDING.

I was sleeping in a room on the third floor of the hotel," said Dr. Fleming, "when the first shock occurred. An earthquake in San Francisco was no new sensation to me. I was there in 1868, a boy of ten, when the first great earthquake came. But that was a gentle rocking of a cradle to the one of Wednesday.

"I awoke to the groaning of timbers, the grinding, creaking, and roaring. Plastering and wall decorations fell. The sensation was as though the buildings were stretching and writhing like a snake. The darkness was intense. Shrieks of women, higher, shriller than that of the creaking timbers, cut the air.

"I tumbled from the bed and crawled, scrambling toward the door. The twisting and writhing appeared to increase. The air was oppressive. I seemed to be saying to myself, 'will it never, never stop?' I wrenched the lock, the door of the room swung back against my shoulder. Just then the building seemed to breathe, stagger, and right itself.

"But I fled from that building as from a falling wall. I could not believe that it could endure such a shock and still stand. The next I remember I was standing in the street laughing at the unholy appearance of half a hundred men clad in pajamas and less.

"The women were in their night robes; they made a better appearance than the men. There was raiment of every hue—and in many cases raiment never intended to be seen outside the boudoir.

"I looked at a man at my side; he was laughing at me. Then for the first time I became aware that I was in pajamas myself. I turned and fled back to my room. There I

dressed, packed my grip, and hastened back to the street.

"All the big buildings on Market street toward the ferry were standing, but I marked four separate fires. The fronts of the small buildings had fallen out into the streets and at some places the debris had broken through the sidewalk into cellars.

"I noticed two women near me. They were apparently without escort. One said to the other, 'What wouldn't I give to be back in Los Angeles again?'"

"That awakened a kindred feeling, and I proffered my assistance. I put my overcoat on the stone steps of a building and told them to sit there. In less than two minutes those steps appeared to pitch everything forward, to be flying at me. The groaning and writhing started afresh.

"But I was just stunned. I stood there in the street with the debris falling about me. It seemed the natural thing for the tops of buildings to careen over and for fronts to fall out. I do not even recall that the women screamed.

#### EVERYBODY JUST WALKED.

"The street gave a convulsive shudder and the buildings somehow righted themselves again. I thought they had crashed together above my head. The two women arose and started to walk. I followed in an aimless sort of way.

"The street was filled with moving things again. The rainbow raiment had disappeared, and all were clad in street clothes. Every one was walking, but there was no confusion. We did not even seem in a hurry.

"Down Market street the flames were growing brighter, but we walked with our luggage to the St. Francis. Fires were burning down toward the ferry, but the

Fire Department had turned them. We had faith in the Fire Department.

"Soon I became aware that squads of soldiers were patrolling the streets. It appeared perfectly natural. I do not think I wondered why they were there.

#### JOKED WHILE THEY SHIVERED.

"Men and women were all about us. We looked at each other and talked, even tried lamely to joke. But every few minutes a convulsive quiver swept through the city. The others seemed to be shivering.

"I noticed that the eyes of the men and women were rolling restlessly. Their tones were pitched high. It seemed to grate on my nerves. Then I fell to wondering whether I was talking shrilly too.

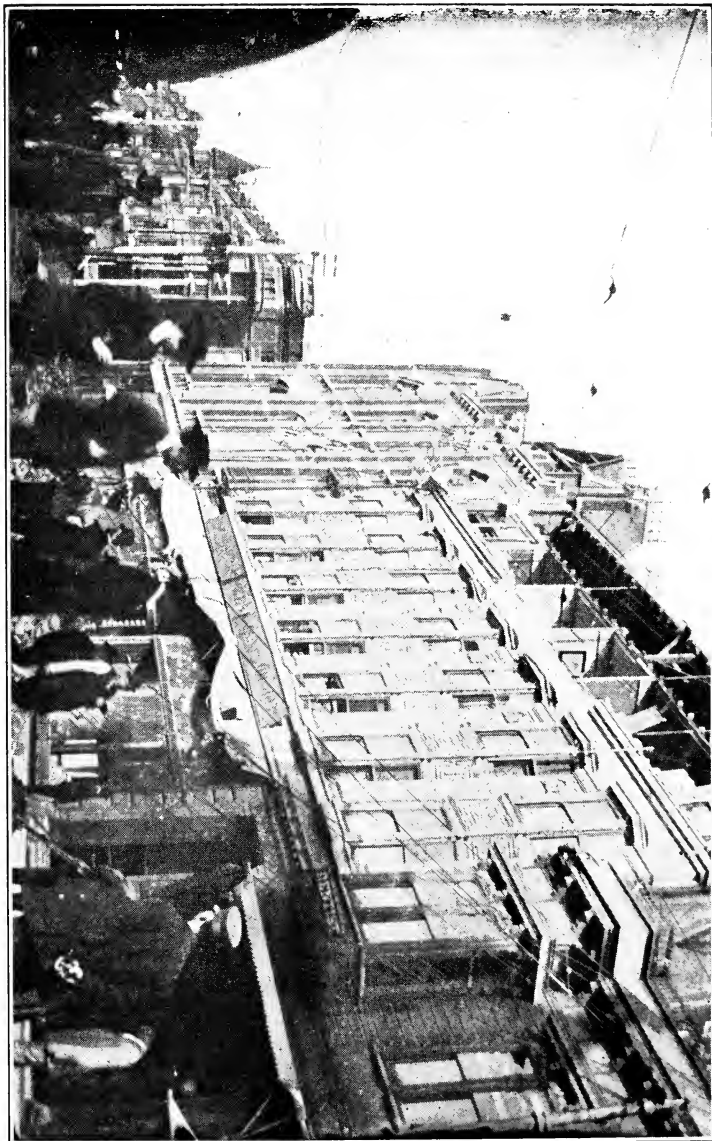
"I went to a grocery without a front and bought a few supplies, things that would make a cold lunch. The grocer did not even overcharge me. He was particular to give me the right change.

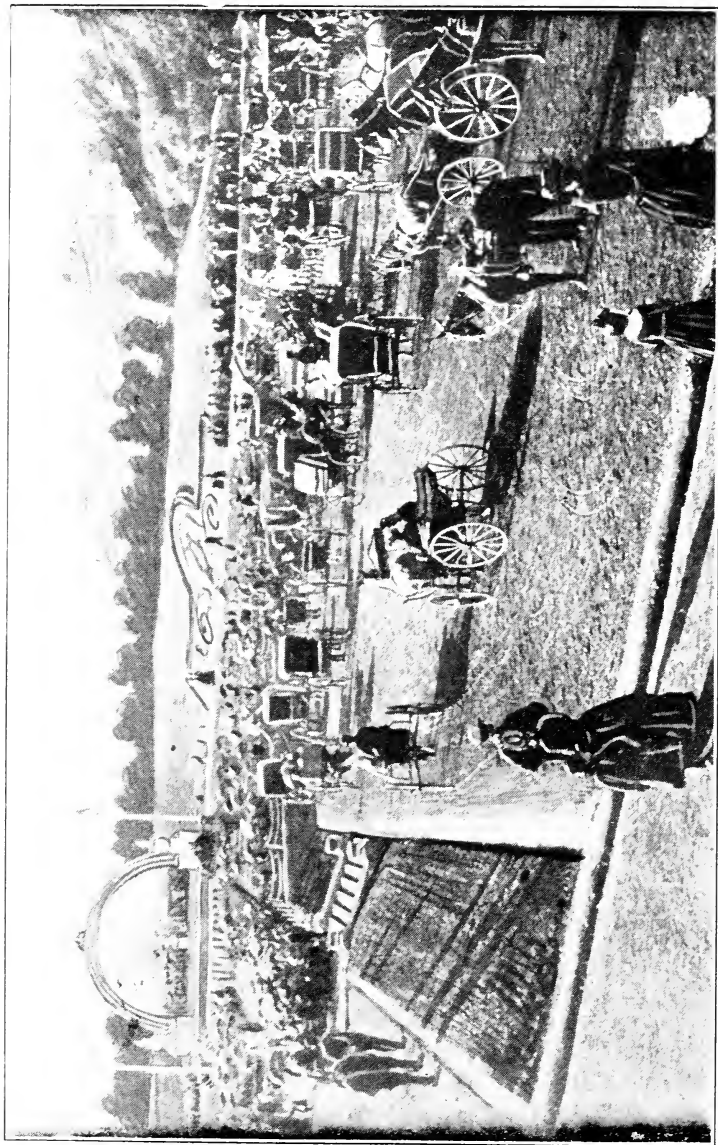
"The soldiers came and told us to move on. It seemed the natural thing to do. By this time the fire was creeping dangerously close. We would have walked to the ferry. We tried it on a score of streets, but that wall of fire was always there. It seemed to creep across in front of us.

"And in front of the fire always walked the soldiers. Many times I hired express wagons. We would ride for a few blocks and get out on the sidewalk. In not a single instance were we charged more than a reasonable price for the ride.

"Once we loitered until the soldiers came up. A rough fellow who had been standing by my side tried to

STREET SCENE AFTER THE SHOCK





GOLDEN GATE PARK, SAN FRANCISCO, ON A MUSIC DAY



dart through the line. He looked like a beach comber. A young Lieutenant caught him by the coat.

“‘Here!’ he called to his men. ‘Shoot this man.’

“I hurried on without looking back. I don’t remember that I heard a shot fired. But at the time it seemed so trivial a matter that I did not pay much attention.

### SAILORS USING BIG GUNS.

“The air was filled with the roar of explosions. They were dynamiting great blocks. Sailors were training guns to rake rows of residences.

“All the while we were moving onward with the crowd. Cinders were falling about us. At times our clothing caught fire—just little embers that smoked once and went out. The sting burned our faces, and we used our handkerchiefs for veils.

“Everybody around us was using some kind of cloth to shield his eyes. It looked curious to see expressmen and teamsters wearing those veils.

“Quite naturally we seemed to come to Golden Gate Park. It seemed as though we had started for there. By this time the darkness was settling. But it was a weird twilight. The glare from the burning city threw a kind of red flame and shadow about us. It seemed uncanny; the figures about us moved like ghosts.

“The wind and fog blew chill from the ocean and we walked about to keep warm. Thousands were walking about, too; but there was no disturbance. Families trudged along there. There was no hurry. All appeared to have time to spare. The streets, walks and lawns were wiggling with little parties, one or two families in each.

“All night we moved about the hills. Thousands were

moving with us. As the night wore on the crowd grew. Near daylight the soldiers came to the park. They were still moving in front of the fire.

"I had bought a little store of provisions before night-fall. I walked over to the fire made by one squad of soldiers and picked up a tin bucket. I went to a faucet and turned it on. A little water was there. I boiled some eggs and we ate our breakfast. Then we concluded to make our way to the water front as soldiers were driving us from that part of the hills. The flames were still after us.

#### SHOES CUT FROM WOMEN'S FEET.

"We walked toward the water front for hours. Part of the time it was through the burned district. The streets were rough, the sidewalks jagged and broken. The women suffered severely. Jagged stones and wires cut their thin shoes from their feet. Bandages did no good.

"The walk back through the ruins was the worst of all. Dead horses lay along our path. Some were burned to a crisp. On Howard street, near Market, lay the charred bodies of two men. Those were the only dead we saw in the streets.

"Walking and resting, we reached the ferry near sunset. Soldiers seemed to be everywhere. They were offering milk to women and children. We took a boat to Oakland and hastened by trains to Los Angeles. If it were not for the sting of the cinders that still stick to my face, I might think it was all a nightmare."

#### MERCHANTS THREW STORES OPEN.

Miss Bessie Tannehill, of the Tivoli Theatre, San Francisco, is also a refugee here.

"I was asleep in the Hotel Langman, Ellis and Mason streets, when the shock came," said Miss Tannehill "There were at least 100 persons in the building. At the first shock I leaped from my bed and ran to the window. Another upheaval came and I was thrown from my feet. I groped my way out of the room and down the dark stairway. Men, women and children, almost without clothing, crowded the halls, crying and praying as they rushed out.

"We finally obtained a carriage by paying \$100. Fire was raging at this time and people were panic stricken.

"After getting outside of the danger region I walked back, hoping to aid some of the unfortunates. The merchants on upper Market and nearby streets threw open their stores and invited the crowds to help themselves. Mobs rushed into every place, carrying out all the goods possible.

"I saw many looters and pickpockets at work. On Mason street a gang of thieves was at work. They were pursued by troops, but escaped in an automobile."

#### WERE ON A TWELFTH FLOOR.

Mr. and Mrs. William R. Harryman were on the twelfth floor of the St. Francis Hotel when the shock came.

"The room seemed to twist out of shape," said Mr. Harryman, "and the furniture was disarranged. The door stuck and it required all my strength to open it. Men were shouting, women screaming hysterically and everybody was endeavoring to get to the elevators and stairways. It was soon discovered that the elevators were not running and the people fell and rolled down the stairs.

"My wife and I descended, and on the first floor found a mass of people, whom the hotel employees were implor-

ing to remain there as it was the safest place; but all seemed determined to get outside.

"Dressing as we ran, my wife and I found we had picked up enough clothes to present a respectable appearance, except that we had no shoes. We gradually fought our way to the ferries.

"All along the way we saw bodies of human beings who had met death; some had been crushed by falling walls, others had jumped from high buildings, while still others had been trampled to death by the excited populace. Horses, having broken their hitch reins, were dashing frantically along the streets, knocking people down.

"We finally got aboard a ferryboat and landed on the other side of the bay. We took the first train for the East."

#### THE SCENE FROM THE HARBOR.

Officers of the Steamship Itauri, which lay in the harbor joined in this description:

"As seen from the bay it was a sublime, but terrible spectacle. We were anchored more than a mile out in the roadstead, but the wind as it swept over the burning city and down upon us was like the breath of a demon. At times it was impossible for us to remain on deck, so great was the heat. The terrific concussions of dynamite brought hundreds of fish to the surface. Our clearance papers were burned, but we could not retain our anchorage, and late Thursday afternoon we started toward the open sea.

"Wharves were filled with people. They beckoned to us that they needed assistance. It was the thought of self-preservation that kept the Itauri's course unchanged. At midnight we were 30 miles at sea, but the flames were

still visible, and until almost dawn we stood on deck and watched the reflection of the flames as they played to and fro on the cloud mountains which hung over the ruined city."

#### SOME PROMINENT VICTIMS.

James D. Phelan, former Mayor of San Francisco and chairman of the Finance Relief Committee, said:

"When I was awakened in my house by the shock, I made my way down town toward the fire, which was raging in two directions. One branch of the fire destroyed my office building on Market street and the other my home in the Mission. Of my personal effects I saved but a few. My family left my home and went to Golden Gate Park, where I followed and pitched two tents which I had at my home. Later I accompanied my family to Burlingame, 20 miles south, in an automobile.

"The city will be rebuilt on lines of strength and architectural beauty heretofore unknown."

Rudolph Spreckels:

"I can give no connected account of my experience now. I have not had time to think about myself. I volunteered as a special officer and assisted the firemen in trying to check the fire, and my experience at Van Ness avenue and Union street was certainly a thrilling one. Of course, San Francisco will be rebuilt, and better than ever."

Herman Oelrichs:

"I was in the St. Francis Hotel. I lost all my personal effects except the suit of clothes that I have on and two flannel shirts. I have done what I could everywhere to relieve the suffering, and just at present am too exhausted to think connectedly."

Homer S. King, president of the San Francisco Clearing House, said:

"San Francisco has a future and will rebuild. There is not even a panic, and I have seen more than one panic.

"The banks are more than willing to help the people who have shared in the common distress. Chicago and Baltimore recovered from even greater setbacks. The people of San Francisco have always been progressive, and are recognized as hard workers. There is no reason why they should not do the same."

#### METROPOLITAN OPERA COMPANY.

Members of the Metropolitan Opera Company, who were appearing in San Francisco, and the night before the earthquake had delighted a monster audience, suffered severely.

All of the splendid scenery, stage fittings, costumes, and musical instruments were lost in the fire which destroyed the Grand Opera House, where the season had just opened to splendid audiences. No one of the company was injured, but nearly all of them lost their personal effects.

Mme. Sembrich placed her loss by the destruction of her elegant costumes at \$20,000. She was fortunate enough to save her valuable pearls. The total loss to the members of the organization may reach \$150,000.

On the morning of the earthquake the members of the company were distributed among the different hotels, most of them being at the Palace, St. Francis, and the Oaks. Messrs. Caruso and Scotti, and Misses Walker, Abott, Jacoby, and other principals were at the Palace. Messrs. Plancon and Dippel and Mme. Sembrich were at the St. Francis, and the musicians and the chorus at the Oaks.

Mme. Eames, Miss Fremstead, and several others were at private hotels or residences.

#### GUARDED HIS VALISE.

The sudden shock brought the singers out of their bedrooms in all kinds of attire. The women were in their night dresses the men in pajamas. None paused to dress.

Ten minutes later Mr. Caruso was seen seated on his valise in the middle of the street. Many of the others had rushed to open squares or other places of supposed safety. Even then it was difficult to avoid the debris falling from the crumbling walls.

A few had time and presence of mind to pack up some necessary articles before the outbreak of the fires in all directions barred them from returning to their rooms, but very few saved anything except what they had stood in.

Several of those stopping in the Oaks were awakened by plaster from the ceiling falling on their beds, and had barely time to flee for their lives.

One singer was seen standing in the street, barefoot and clad only in his underwear, but clutching a favorite violin which he had carried with him in his flight. The first impulse of many was to rush for their trains, which, however, happened to be across the bay.

Mr. Rossi, the basso, though almost in tears, was heard trying his voice on a corner near the Palace Hotel.

Gradually calm was restored, and taking a lesson from the coolness of the Californian, the artists began to regard their plight as less serious than it might have been.

Nearly all suffered more or less from the sudden stoppage of the food supply. A rush was made for the nearest grocery stores, and baskets were quickly filled with provi-

sions and what wine could be secured before the closing of the liquor establishments. The next day many were reduced to a diet of bread, chocolate, and sardines.

Ernest Goerlitz, general manager of the company, until the Grand Opera House was actually reached by the flames, had hoped to give the proposed matinee performance of "The Marriage of Figaro." He and a few others thought the playhouse was fire-proof, and not ten minutes before the building went up in smoke some of the musicians were dissuaded from trying to save their instruments.

#### SLEPT NEAR THE LIONS.

Alfred Hertz, the conductor, was one of those quartered at the Chutes after the earthquake. He slept near the Zoo.

"To my dying day I will never forget my experience when I was awakened by the roaring of lions. I knew not but that I was in a jungle or den of wild beasts," he said.

Mr. Parvis, Mr. Dufrique, the baritone and stage manager, and Mme. Dufrique, the harpist, narrowly escaped death when the Oaks collapsed. Mme. Dufrique lost her precious Arard harp in the fire at the Opera House.

The courage displayed by some of the artists, notably the Misses Edyth Walker and Bessie Abott, helped largely to quiet the fears of their comrades, and their kindness to the chorus was highly appreciated.

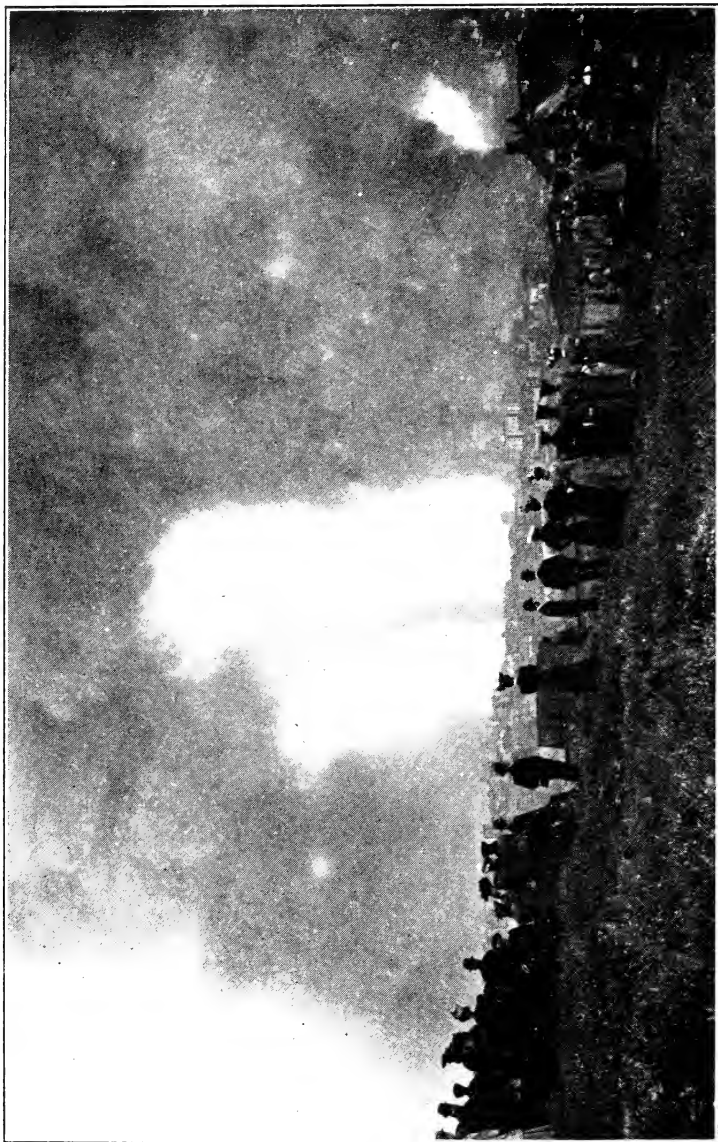
After the earthquake, Mme. Eames and Mme. Sembrich found refuge at the home of Dr. Harry Tevis, but this later was burned, and they were then cared for by other friends.

Miss Olive Fremstead, who had apartments at the St. Dunstan, was fortunate to escape with her life, the building being shattered by the earthquake.





THE MISSION DOLORES, FOUNDED OCTOBER 9TH, 1776.  
THE OLDEST CHURCH IN SAN FRANCISCO  
NOT DESTROYED BY THE FIRE



CROWDS IN LAFAYETTE SQUARE WATCHING THE FIRE

The guests at the Palace Hotel, among them being the Misses Walker and Abott, who were on the top floor when the great shock came, took it for granted that death was inevitable. The regular swaying of the walls and the pitching of the floor they compared to the motion of an ocean steamer in a storm. Yet, until destroyed by fire, the big hotel stood firmly on its foundation.

#### MME. EAMES TELLS EARTHQUAKE STORY.

The following statement of her experiences during and after the earthquake was written by Mme. Eames, of the Metropolitan Opera Company.

"I was in bed, and at the first quiver of the earthquake awoke to perfect consciousness. I was in a four post bed with a very heavy mahogany canopy over it. I wondered whether I had better get out, but the futility of any movement to save myself came over me, and I lay quite still, only holding to the bed to be kept from being thrown out. I was absolutely without fear at any time. As soon as the movements began to quiet themselves I thought of moving, but each time they redoubled in intensity.

"At last at the end of the first big shock I heard the voice of our host asking if I were afraid. Of course, I got up and dressed as quickly as I could, and rushed down to the Hotel St. Francis to see what was happening to Mme. Sembrich. Dr. Tevis and I got into an automobile with which an acquaintance was fortunately passing. On getting there we rushed up six flights on foot, as no elevators were going, only to find Mme. Sembrich gone. We at last found her and begged her to come up with us, as Dr. Tevis' house was on the top of Nob Hill. We passed the day there watching the flames approaching and feeling shocks

of earthquakes at intervals. Dr. Tevis all the time trying to get some sort of conveyance to get us out of town, not from fear of earthquake, but of the approaching fire. He at last found a landau from a livery stable, whose driver consented to wait in front of the door until we must leave.

“The town was burning between us and the ferries, and there was then difficulty in getting there. At about eight o'clock the doctor said we had better get out to the north beach, as we might be surrounded by flame, and not be able to get away. The house was ultimately surrounded by flames on Thursday and was the last to remain standing in that vicinity. It was a monument of perfect taste, and was burned to the ground with all in it, including our clothes, we being able to carry with us in our hurried flight only our valuables and one change of clothing. We took blankets and lay out all night on the ground, the dew falling so heavy that we were soaked.

“About nine o'clock on Thursday morning Dr. Tevis said the fires had burned themselves out between us and the ferry and we could get over to Oakland, and must go at once. The carriage took our few belongings and two of our party least fit for violent exercise, while the rest of us walked. At the Oakland ferry we found a large crowd, but after waiting there three-quarters of an hour for the carriage, which we had outwalked, and which through some misunderstanding had waited for us at another place all the time, we got safely over to Oakland.

“There, leaving our two maids in carriages, we took a train to a suburb of Oakland, where lives a relative of Dr. Tevis. There we found the house closed and lay about on the ground waiting for them to find means of conveying us to Dr. Tevis' country place, sixty miles from Oakland. As we were leaving North Beach for the ferry the manager

of our host's country place met us, having come to look for us, and it was he who told us we could get away.

"All the part of the town through which we walked was later swept by the flames, which returned to destroy all that in the previous fire they had left unconsumed. Through some misunderstanding Sembrich's maid was left with some members of the opera company in Oakland, so she returned to the special train they were making up.

"I had lost my voice completely, and felt I could not return to endure a possible three days' sojourn in a railway train. At about five o'clock Thursday afternoon we managed to get an automobile, and Dr. Tevis, Mr. Petriego, my maid and myself came up here, where we have been camping out. We found the caretakers in a state of terror on our arrival, and the house demolished by the earthquake. We had taken a ride in an automobile of four hours, and were glad to lie on a comfortable mattress in one of the cottages of his employees.

"At no time have we felt any fear—the whole thing seems perfectly natural. When everybody is suffering from the same cause, one's personal sensations are minimized. One feels very small. As I lay in my bed at the first shock I took mental notes, as I shall probably never see another earthquake, and I am not sure I want to."

#### EXPERIENCE OF ADOLPHUS BUSCH.

This is the story of his experience sent by Adolphus Busch to friends in St. Louis:

"I left San Francisco this morning with my family, Henry Nicholas and Carl Conrad. The earthquake which shook San Francisco made all frantic, and was undoubtedly the severest ever experienced in the United States. The

beautiful Hotel St. Francis swayed from south to north like a tall poplar in a storm. Furniture, even pianos, was overturned, and people were thrown from their beds.

"I quickly summoned my family and friends, and urged them to escape to Jefferson Square, which we promptly did.

"An awful sight met our eyes. Every building was partly or wholly wrecked, roofs and cornices were falling from sky-scrapers on lower houses, crushing and burying the inmates.

"Fires started in all parts of the city. The main water pipes burst and flooded the streets. One earthquake followed the other. The people became terrified, but all behaved wonderfully calm.

"Over 100,000 persons are without shelter, camping on the hills. There is no light, water or food.

"Fortunately, martial law was declared at once, and the regulars and militia maintained order and discipline, otherwise more horrors would have occurred, and riots might have prevailed.

"The fire spread over three-fourths of the city and could not be controlled, no water to fight it, no light, and the earth still trembling.

"Building after building was dismantled to check the progress of warring, seething flames, but of no avail. We were fortunate to secure two conveyances, and fled to Nob Hill, from which we witnessed the indescribable drama. Block after block was devastated. The fires blazed like volcanos, and all business houses, hotels, theatres, in fact, the entire business portion lay in ruins and also two-thirds of the residences; but I trust 'Frisco will rise a phoenix from its ashes, that a new and more beautiful San Francisco will be born, and that the generous American nation will give

it the support and financial assistance it so fully deserves.

"After a night of horrors we boarded the ferry for Oakland, where my private car had been since Tuesday.

"We are now en route home with nothing saved but what is on our backs, but extremely happy at having escaped unharmed.

ADOLPHUS BUSCH."

Arthur Welshans, the dramatic critic, who was in the midst of the disaster wrote this of his experiences. "The flames have been conquered and the pall of disaster is now lifting from the ruins of the city, leaving bare to the gaze of the world a specter of desolation such as the people of the United States have never before witnessed. The flames were checked north of Telegraph Hill, the western boundary being along Franklin street and California street southeast of Market street. The firemen checked the advance of flames by dynamiting residences. Many times before had the firemen made such an effort, but always previously had they met defeat. But success at this hour means little for San Francisco. It stands for but the conquering of flames after the battle had been lost. Long ere the final struggle came San Francisco had been lost, its greatness had been lowered, its future terribly blighted.

"The flames are still burning fitfully about the city, but the spread of fire has been stopped. It is the end of losses, but for many days there will be smoke to carry its message aloft into the skies, and for months will be the ruins to bring their reminder of holocaust.

"Oakland has become the nearest and the logical place for refuge for the homeless thousands who are leaving the doomed city across the bay by every boat. Thirty

thousand homeless ones found shelter and comfort in churches, halls and private residences of the city.

"The horrors of the scenes and the terrible suffering occasioned by the lack of water can perhaps be imagined by this statement—when a small stream of dirty water spurted up through the cobblestones and formed a muddy pool at the corner of Powell and Market streets, hundreds of men and women, rich and poor, old and young, knelt and drank to quench their terrible thirst."

Mrs. Hannah Frank, a visitor in San Francisco from Chicago, said:

"My room was at the St. Francis hotel. When I was awakened by the terrible rumbling and shaking the walls seemed to be falling around me. Somehow—I don't know how—I got dressed and went out to the street, and there, as soon as people began to realize what had happened, a party of the hotel people was made up and we secured a delivery wagon, and then by some roundabout way got to the ferry.

"I have seen two eruptions of Vesuvius, but neither of them was anything like the experience that I passed through in San Francisco. In 1900, at the time of the eruption, I was at Recina, Italy. I used to think it was a terrible experience, but as I look back at it now it seems nothing but a trifling adventure."

#### SAW HIS COMPANION KILLED.

Mr. Egbert H. Gold, president of the Chicago Car Heating Company, Railway Exchange building, said:

"I was asleep in a room on the sixth floor of the Palace Hotel when the quake came. It threw me out of bed and rolled me over the floor back and forth like a ball. The walls of the room crashed forward with a grinding sound,



covering me with plaster. I hurriedly made my way downstairs, and was the first to reach the office. There was no one there but the night clerk and two men who had been scrubbing out. One of the scrubbers seemed to have gone crazy. He was rushing about wildly with a pail of water in one hand and scrub brush in the other, shouting:

“‘Dis am de end ob de worl’, suah.’ The other one said: ‘This is the worst ever,’ as though he had passed through earthquakes before.

“I remember everything that occurred perfectly well, although I must have been excited. My next recollection is I was running down the street as fast as I could run in my pajamas. Walls were falling about me in Market street. The grinding and rumbling noise continued. A wall dropped across the street directly in my path. At the same instant I noticed that my feet were full of glass and I had no clothes on. I walked slowly back to the hotel, thinking I was several miles away from home and without any money and I’d better go back after some.

“The women were crying when I returned to the hotel, but they all seemed safe, so I hurried back to my room, packed all my clothes, got my money, and escaped without as much as the loss of a collar button. I had my camera with me and it occurred to me that it would be a good time to get some photographs, but I dismissed the thought as I had more important things to think of.

“As I was leaving my room with my suit case in my hand I heard cries in the adjoining room: ‘Let us out! Let us out! We’ll die!’

“A man and his wife were in the room and the earthquake had twisted the wall so they could not open the door.

“I put my shoulder to the door and succeeded in open-

ing it a few inches. With the man and his wife pulling with all their might we soon had the door open enough to let them out. I advised them to pack up their clothes, but they ran downstairs without paying any attention to me

"I was with another man from the hotel, whose name I did not know. As we proceeded we saw a number of dead men lying in the streets and one woman. One man had been flattened out by a falling wall. I turned to my companion as we passed this grewsome sight and saw him pitch forward. His head had been taken off cleanly by a falling stone."

H. R. Crockett of Southampton, England, who was on a trip around the world and was in the Occidental hotel during the earthquake, said:

"I've seen enough of America, and propose to get back to England, which if it is a little island as they say, at least is not disturbed by such convulsions of nature as I saw out here. I have lost my baggage and become separated from two companions with whom I was going around the globe. I was in an earthquake in Italy, but it was nothing like this.

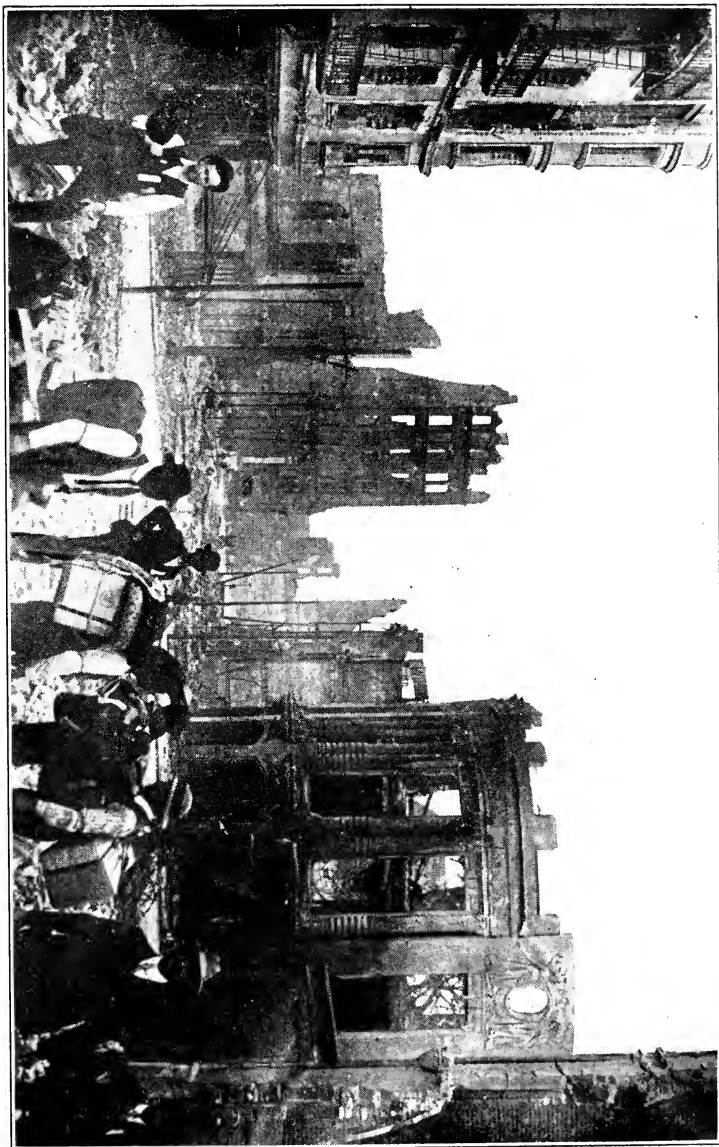
"Falling plaster and the swaying of the bed awoke me, and while I knew what it was I had no conception of the ruin it had wrought."

#### A WOMAN'S DESCRIPTION.

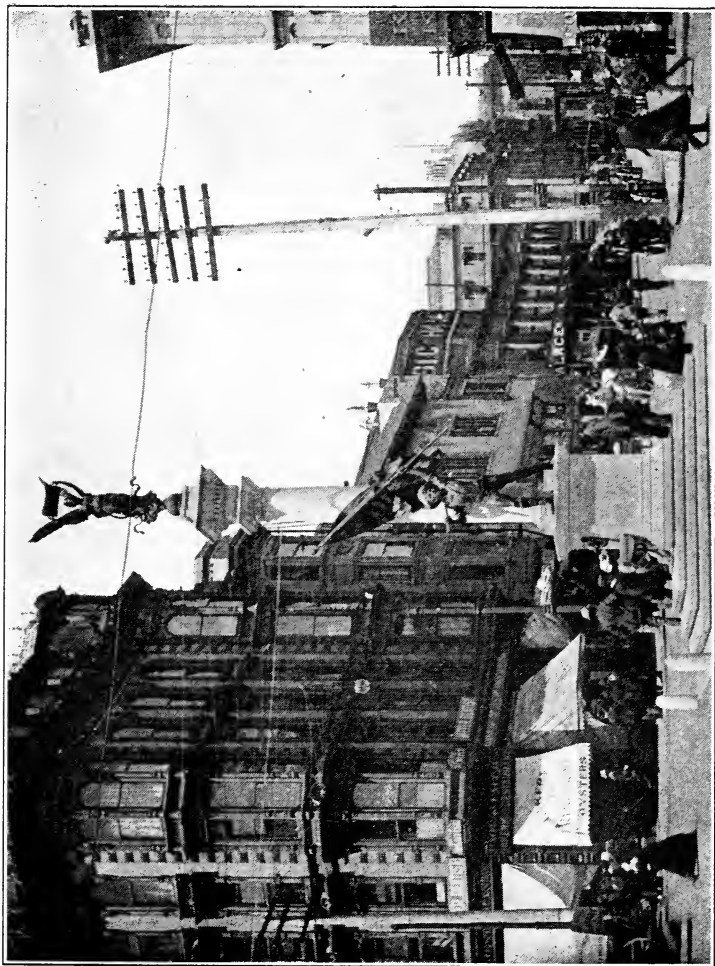
A woman's description of the scenes of horror following the earthquake was furnished by Mrs. Mary Longstreet, a San Franciscan. Mrs. Longstreet said the burning city "was like a picture of hell." This is her story:

"We were all on the eighth floor of the hotel, and were awakened when the building began rocking like a ship.

"Suddenly, as we were standing there, the entire city



THE TIVOLI OPERA HOUSE, SAN FRANCISCO, AFTER THE FIRE.



THE PHELAN MONUMENT, MASON AND MARKET STREETS, SAN FRANCISCO

seemed to catch fire. In all directions and as far as we could see the great tongues of flame leaped into the air. Terrified as we were, we stood by the window. In less time than it takes to tell it the entire part of the city between us and the ferry was ablaze. It was a beautiful yet terrible sight. We remained in the hotel till 10 o'clock, and at that time succeeded in getting a carriage and an automobile. We then left the hotel and drove to the home of a friend a mile away. When we got there we found the house in ruins.

"We then went to the home of the Tevises and remained there until we were driven out by fire. Finally we found refuge at the residence of J. F. Winslow, on Nob Hill.

"We slept on the floor that night, but they had no food, and after scouring the city over my brother managed to purchase ten ship's biscuits and four boxes of sardines, and after eating these we made beds on the floor and tried to sleep. We had a little candle in our room, but that we did not need.

"The hundreds of fires made the city light as day, with a ghastly, sickening glow that made one tremble with fear.

"Words cannot describe human emotions at such a time as that, and I wish I could shake off that feeling that has clung to me ever since the first shock of the earthquake aroused me from my slumber.

"I saved some things—three pairs of shoes, I believe. I put the shoes in a bag and brought them along. My diamonds and money I left in the hotel. But we all did that. No one at such times cares for their effects. We expected death at any minute, and were surprised that it did not come. Can you wonder that I saved the shoes instead of my valuables?

"You would never know San Francisco now. It is nothing but ruins. Did you ever see a child build a house with blocks and then knock it down? Well, that is the way buildings fell all over the city during the earthquake.

"I cannot describe it," said Mrs. Wilcox who shared the ordeal with Mrs. Longstreet. "I awoke at the first tremble, and, oh, what a terrible sensation! Plaster fell from the walls, and I expected at any second to see the St. Francis Hotel crumble to the earth. With the earthquake came that horrible roar. It sounded like thousands of violins being played on the bass strings, and all at a discord.

"Did you ever see the picture of 'Hell,' which hangs in the Santa Barbara Mission? It was something like that, only a thousand times worse. We had a hard time getting to Oakland, where we caught a train. The railroad people deserve great credit. Once on the train we were shown every courtesy. If people did not have money they were taken along just the same. Money was no object at that time."

#### SHOT TO END THEIR AGONY.

"Soldiers shot living beings to save them the torture of death in the flames," said Miss Margaret Underhill "The horror of it all was so overwhelming, that the sight of the dead became commonplace."

Miss Underhill told of her escape after the first shock from a three-story frame building, which later collapsed. It adjoined the Sacred Heart College.

"We stopped to watch the soldiers, men, and policemen, who, with timbers from the wreckage, were at work upon the front of a burning frame building," she said. "The front of the three-story structure had fallen outward.

"Pinned beneath the structure was a man who pleaded piteously with the men who worked to release him. His head and shoulders projected from the wreckage. With his free arm he tried to help the workers by pulling at the timbers. His eyes bulged from their sockets. One by one the men were driven back by the flames until only one was left, a soldier.

"From where we stood we could see the very timber that held the man down, smoke. His hair and mustache were singed.

"For God's sake, shoot me," he begged. His voice rose clear above the roar of the flames. The soldier turned and went back.

"Shoot me, before you go," the man yelled. The soldier turned quickly, his rifle at his shoulder. The rifle cracked, and the blood spurted from the head of the man.

"I covered my eyes and walked on."

#### THE STORY OF A PRISONER.

Harshly graphic is the story told of the earthquake by Detective Sergeant Theodore F. Snyder, of the New York Central Office, and his prisoner, Edward E. Clark, twenty-one years old, whom Snyder went to San Francisco for, to answer a charge of grand larceny. The detective sergeant got to the city of tragedy a few hours before the great quakes began, while young Clark was one of the 150 prisoners in the Hall of Justice, which was crumbled by the shock. The narration of experiences of each man makes a dreadful story.

Early on the morning of April 18, Clark, whose cell adjoined a myriad of the same on the top and fifth floor of the Hall of Justice, awoke from a sound sleep, with the

noise of falling masonry in his ears and the frenzied cries of more than seven score prisoners, similarly locked in their narrow cells, clamoring for help. Among the men was a murderer, who was to meet his punishment the next day, and it popped into the minds of the jailed beings that his confederates, in a desperate plan, had blown up the place in an effort to liberate him. No one seemed to know what became of the man to be hanged.

To render their misery the greater the prison guards, almost to a man, Clark declared fled from the building, but Judge Cavanaugh, with several police officers, arrived at six o'clock, less than an hour after the great shock, and calmed as well as possible the terror of the inmates, explaining that an earthquake had taken place but succor was to be attempted in that every man would be taken from the building immediately. Hurriedly the Judge discharged all prisoners who were locked up on petty charges. The rest, in charge of the militia, hastily summoned, were marched to the corner of Broadway and Trade street.

Passing through Kearny street, said Clark, a man could be seen beneath the wreckage of a building, begging piteously for relief, by being shot, if necessary. Then, according to Clark, a policeman fired twice at the man under the debris, but did not appear to have given him a mortal wound, whereupon the man's own brother snatched the revolver from the policeman's hand and himself fired a bullet into the brain of the unfortunate, whose rescue was impossible. Later, Clark was told, the man who fired the fatal shot gave himself up and was discharged.

For fifty-two hours, the men in the band he was with had no water or food. They were taken first to the Broadway county jail, which used to be an ancient Spanish prison, but the fire menaced this structure and the pris-



oners were taken on a steamer in the afternoon to Fort Mason, seven miles away, whence they were shipped to San Quentin, where the warden denied them entrance on the ground that they were federal prisoners, in the charge of troops. The steamship took the men again toward San Francisco, but as it entered the harbor the thousands of persons who lined the wharves, holding out entreating arms and pleading to be taken aboard and away from the scene of destruction, caused the captain to steam away, finally landing the prisoners at Alcatraz Island, a solid rock whose center had a great fissure caused by the earthquake. There Clark was when Snyder got him and brought him to New York.

The detective sergeant told of having reached San Francisco at half-past one o'clock on the morning of the shock, taking a room at the Netherlands Hotel. He was shaken out of bed by the quake a few hours later, and ran out into the hallway, where the first man he saw cried out that an earthquake had come and every one had better run for his life. Snyder got his clothing on partially and seized his baggage, a grip, with which he ran down stairs with the crowd. He went to the Hall of Justice at a few minutes after six o'clock, when Mayor Schmitz had arrived with Chief Dinan, of the Police Department, and Snyder was told by the latter to help Detective Sergeant Edward Gibson, of the San Francisco police, to get as many automobiles as possible and bring them to the Hall of Justice. The two men requisitioned quite a number, which were at once put to use.



## DEATH PENALTY FOR LOOTING.

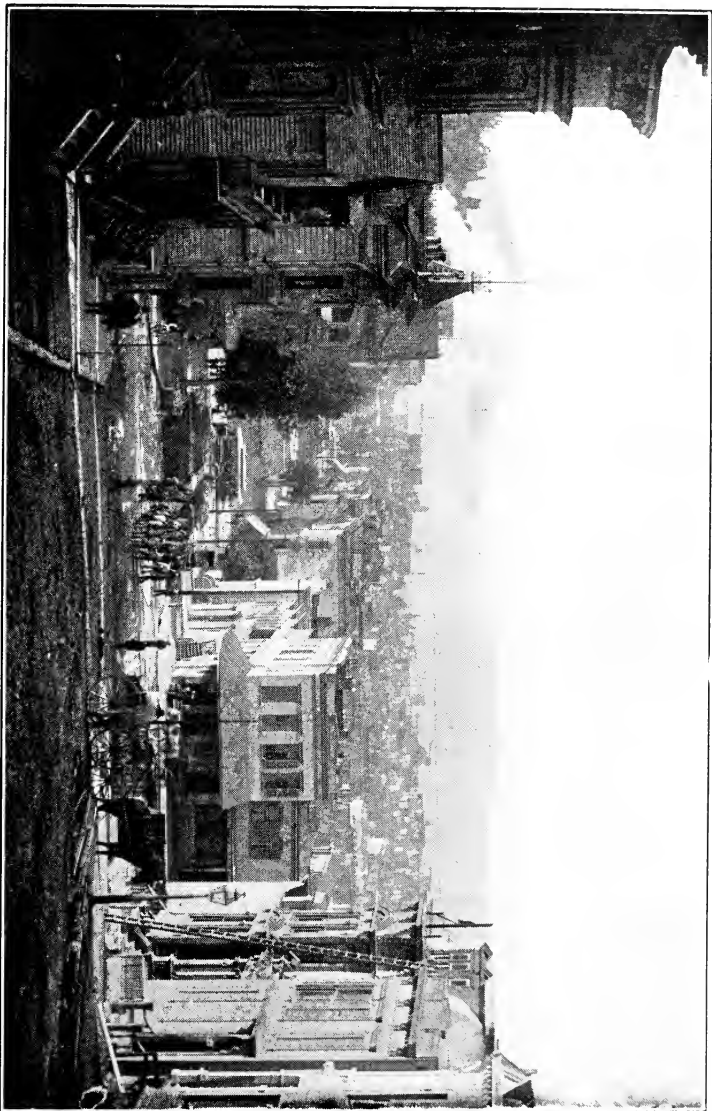
A disaster such as that which overwhelmed San Francisco brings out the nobility of some men and opens the way for revelations of the depths to which others are sunk. Thus, in the very midst of an heroic battle against nature and fate, waged by some, others give thought only to the advantages of such an hour for theft and deviltry. Mayor Schmitz and General Funston joined in prompt and drastic measures to halt the thief and looter. Orders were issued to the policemen, troops and citizen guards to shoot on sight any one seen in the act of robbery. Fourteen paid the penalty of death for violation of the mandate that they must not steal. This is one of the sad chapters in the human side of the catastrophe which San Francisco would willingly forget.

Public opinion everywhere sustains the order and the men who carried it out. In critical hours little things may destroy the last vestige of law and order and introduce a reign of anarchy. In a city of more than four hundred thousand persons there is bound to be a large number, needing only a leader, to profit by any nefarious scheme which may be safely carried out under cover of the universal confusion. A single theft, against which no strong arm is raised, can easily lead to a thousand. Under such circumstances the sanctity of property becomes a tenet which it is tenfold necessary to uphold. The slow process of arrest, in the midst of disorganization, such as inevitably follows in the trail of great public disasters, is practically out of the question. The fact that troops take the place of civil officials in the preservation of order is significant of the need of all

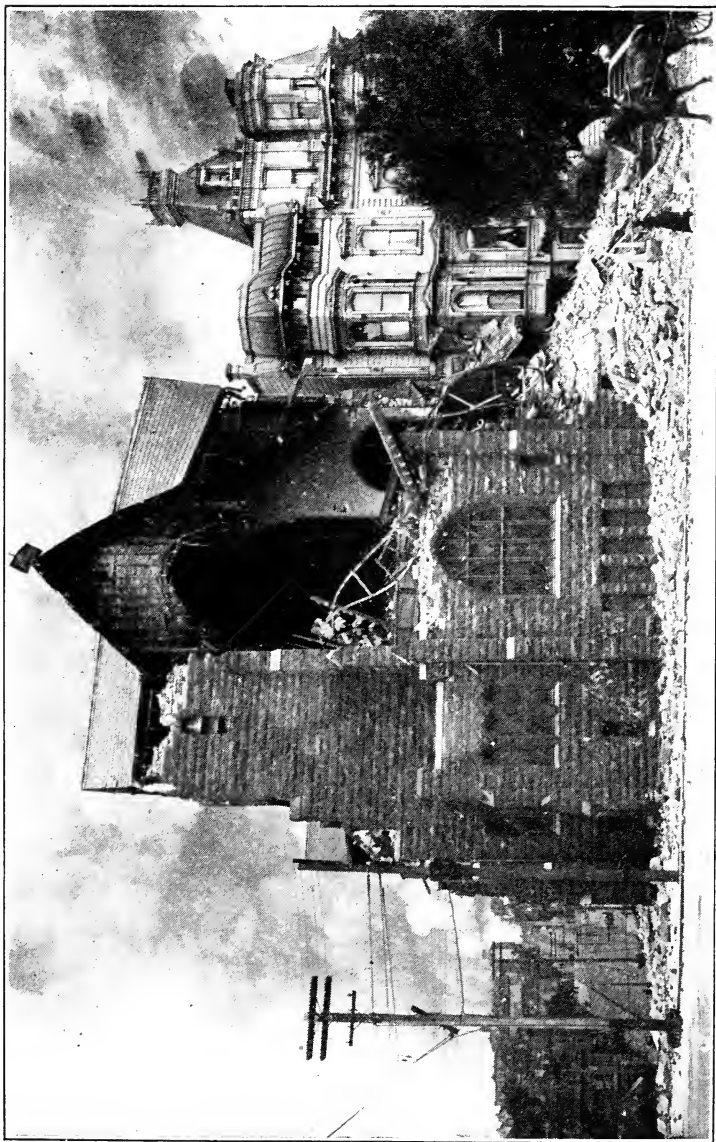
of the rigor that military jurisdiction means. The "strong arm" of the military is the loaded gun. The civil tribunal as well as the civil official must give way and in place of judge and jury must be substituted the death-dealing ball.

The men upon whom it devolved to defend and protect the public in the midst of the great disaster, to preserve, despite the difficulties, some form of stability and organization, took the inevitable step of demanding obedience on pain of death. It was the fate of the community in the balance against the individual and the latter must go down in such a crisis. Ample warning was served. The men who were killed, knew the fate that would follow detection. They deliberately put their lives in the scale against the chance of securing a handful of gold. It is a tribute to the excellence of the provisional government that not one such escaped with his life. San Francisco's chief executive and General Funston could not protect property against earthquake, nor could they guarantee that this or that should not be burned, but they did insure every fragment that was not burned from the depredations of thieves. It cost fourteen lives to achieve this. San Francisco is better off without fourteen so lost to shame, and dead to honor.

Every great calamity, such as that at San Francisco, proves how truly narrow the border between the "rights" of the State and the "rights" of the Federal Government. Four thousand United States troops, backed by the authority of the United States, have invaded California, and insofar as they have shot down fourteen citizens, have made war on the Commonwealth. They were rushed into the city by the commanding general without orders, in violation of every law which governs the States and governs the army. And yet, they were hardly less welcome than the trains of food-



A STREET IN SAN FRANCISCO OVERLOOKING THE BAY



RUINS OF ST. LUKE'S EPISCOPAL CHURCH ON VAN NESS AVENUE

stuffs, and the general who sent them will receive only commendation. When the crisis has passed, the troops will return to the government reservation and the State and Federal Government will resume all of that separateness which the law demands. A month later, if a detachment from the Presidio were desired by the city or State officials for participation in a local Fourth of July celebration, it would take a week of correspondence and "red tape" before a single trooper could be moved. It is said of the laws of the Medes and Persians that they "varied neither jot nor tittle," but new ideas have been born with the unfolding of civilization.

General Funston will not be courtmartialed and dismissed from the army, though he has broken more army law probably than any officer of a century; California will not summon her militia to repel Federal invaders; there will be no demand for indemnity for her citizens shot down, by what, in law, amounts to a foreign foe. And when another great calamity is visited upon an American city some soldier of equal valor and initiative as Funston will do the same thing, or receive the universal condemnation of his countrymen. These events at San Francisco call attention once more to the limitations upon the most solemnly enacted law and prove that only one law is universally stable, the unwritten law of self-preservation and that other which places upon the shoulders of all, responsibility for all of the great brotherhood of man.

Prompt action on the part of the military authorities and the Governor resulted in the maintenance of order. The regulars sent by General Funston were supplemented by marines from the six men-of-war in the harbor. These

co-operated with the police and the city authorities. There were also militia ordered out by the Governor.

#### THIEVES HANGED BY CIVILIANS.

Oliver Posey, Jr., said:

"Were it not for the fact that the soldiers in charge of the city do not hesitate in shooting down the ghouls the lawless element would predominate. Not alone do the soldiers execute the law. On Wednesday afternoon, in front of the Palace Hotel, a crowd of workers in the ruins discovered a miscreant in the act of robbing a corpse of its jewels. Without delay he was seized, a rope was obtained and he was strung up to a beam which was left standing in the ruined entrance of the Palace Hotel.

"No sooner had he been hoisted up and a hitch taken in the rope than one of his fellow criminals was captured. Stopping only to obtain a few yards of hemp, a knot was quickly tied and the wretch was soon adorning the hotel entrance by the side of the other dastard.

"These were only two instances of law executed by civilians that I personally witnessed, but I heard of many more seen by others. The soldiers do all they can, and while the unspeakable crime of robbing the dead is undoubtedly being practised, it would be many times as prevalent were it not for the constant vigilance on all sides as well as the summary justice."

#### ROBBER OF DEAD SHOT DOWN.

Jack Spencer had much to say of the treatment of those caught in the act of rifling the dead of their jewels.

"At the corner of Market and Third streets on Wed-





SHOOTING A LOOTER IN SAN FRANCISCO

nesday," said Mr. Spencer, "I saw a man attempting to cut the finger from the hand of a dead woman in order to secure the rings which adorned the stiffened fingers. Three soldiers witnessed the deed at the same time and ordered the man to throw up his hands. Instead of obeying the command he drew a revolver from his pocket and began to fire at his pursuer without warning. The three soldiers, reinforced by half a dozen uniformed patrolmen, raised their rifles to their shoulders and fired. With the first shots the man fell, and when the soldiers went to the body to dump it into an alley, eleven bullets were found to have entered it."

When the emergency first arose the various neighborhoods were filled with a great desire to emulate the examples of the vigilantes of the Bonanza days and organize self-constituted vigilant committees, whose special duty was to maintain order and to keep fires out of the houses. They did fairly well the first night or so, but after that the trouble began with friction between them and the militia.

Drastic measures were necessary to prevent crime, especially looting. Orders had been given by General Funston and the Mayor to kill any looter on sight, and the vigilantes and a large number of the National Guards took advantage of this order to practice their marksmanship on men who might happen along and who in their excited condition might be said to be acting in a suspicious manner. The trouble finally came to an end when the city was divided into districts for strict military control. The Federal forces took the most difficult territory to guard, and behaved like the nation expects its regular to behave, faultlessly.

## NATION GIVES MILLIONS FOR RELIEF.

The American heart is big and generous. The American purse is lightly hinged and ready to spring open at every call for aid. This has been proved times without number. When famine has visited distant corners of the earth no succor has sped more swiftly than that from America. When disasters have fallen upon peoples of any clime or race the fact has been the same, America has vied with all the earth in sharing of her plenty. To Russia, to India, to Ireland, to Italy, to Porto Rico, have gone boundless gifts when came the cry, "Come over and help us." But it is when some community of the American sisterhood passes under a cloud of affliction that the limitless generosity of the nation becomes apparent. Ask Chicago, ask Boston, ask St. Louis, ask Charleston, ask Galveston, ask Baltimore, and ask San Francisco, what manner of heart is the heart of the American people. Each one of these great cities has faced grim disaster; here fire, there flood, at another earthquake. But whether fire, or flood, or earthquake, the paramount fact has been that fellow-Americans were stricken and needed aid. Never has it failed that the entire nation has arisen as one man and words of sympathy have sped to the scene of catastrophe, coupled with the assurance that deeds of sympathy awaited the command of the stricken. Only in America could \$25,000,000 be contributed, and be at the command of a stricken community within seven days of the hour that brought disaster. This is the record of the American people in their swift reply to the cry of San Francisco for aid.

Within twenty-four hours after the news had gone forth that the Empire City of the Coast had been laid low by earthquake, there was not a community, from one end of the land to the other, in which every organized agency was not at work raising funds. In some crises American cities have valiantly decided to rely upon their own resources to recover from disaster, but from the earliest reports of the probable extent of the disaster at the Golden Gate, it was apparent that San Francisco would need the helping hand. The nation spontaneously formed the conviction that no American city could be left unaided to face a disaster that came perilously close to annihilation. It was a splendid tribute to the faith of any one American in all of the rest that nobody seriously entertained the idea that San Francisco would not survive. And this attitude defied repeated assertions from apparently authoritative sources that the entire city was doomed. The generous outpouring of the millions never for a moment ceased.

In the great sister cities the amounts contributed were, of course, larger. But the same spirit actuated the smallest township, and the multitude of little gifts went far toward swelling the grand total. New York's three millions represents no more of the essential spirit of American fellowship and faith in the indomitable spirit of Americans than the \$300 from the little town of Massachusetts or Maryland, Kansas or Kentucky. The nation unconsciously reared to itself a splendid monument when its gifts in a mighty torrent were poured into the lap of San Francisco.

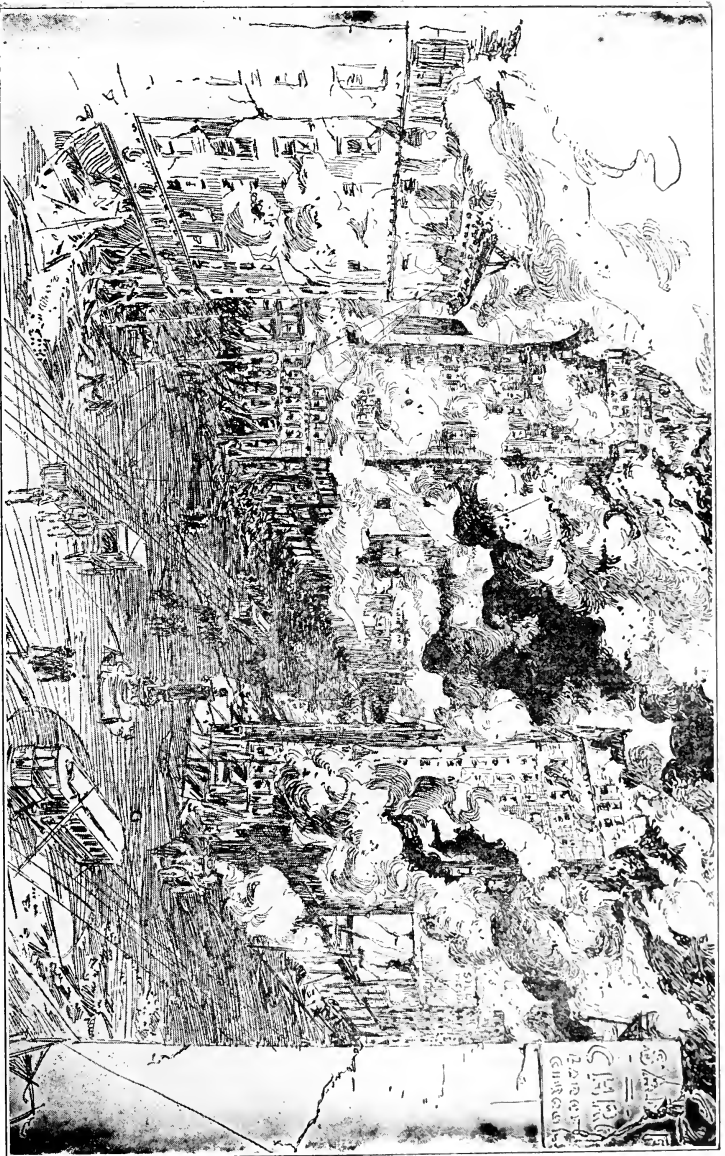
The great National Government played its part. The Congress appropriated first a single million and, as the great need became more apparent, swiftly increased that sum to \$2,500,000. And this from a Congress which has

established a record for keen and close oversight of expenditures. The expense to the Government, however, will far exceed this vast sum, so promptly and generously placed at the service of the stricken city. Federal buildings destroyed by the fire must be replaced, vast accumulations of stores of all kinds were destroyed and must be renewed. Before Congress had placed the relief fund at the service of the War Department both army and navy storehouses at San Francisco, which had not fallen prey to flames, had been placed at the service of the people. Government losses and contributions, in addition to the sum given by Congress, equalled the tremendous sum of \$6,000,000, which the present or a subsequent Congress will be called upon to furnish. State legislatures, where they were in session, followed the lead of the national law making body. The New York legislature appropriated \$400,000 and Massachusetts gave \$250,000. But the subscriptions, in the main, came from the people. It would be useless to give the names of the organizations which shared in the work. The list would include every beneficial, trade, religious, charitable, commercial, financial, professional, educational, organization in America. It would name the public schools and institutions of learning from kindergarten to university, and the employees of every class of firm, shop, factory, office, institution, organized and unorganized. The President named the National Red Cross as his choice to receive general gifts while every newspaper in every town and city in the country became a headquarters for the receipt of contributions. Congregations of every religious denomination in the country made the offering a matter of special obligation. On the Sabbath following the earthquake, the people gathered in houses of worship, everywhere, heard

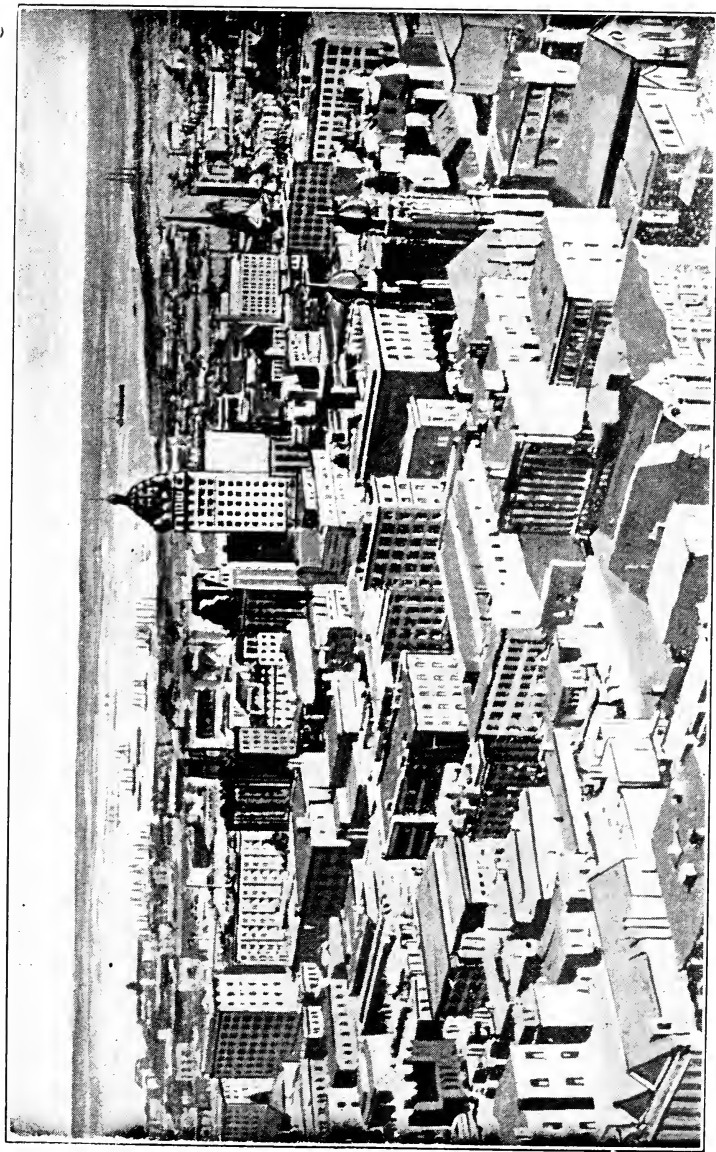
mention of the disaster and were exhorted to liberality. Aside from the millions given for any work of relief, there were thousands of special gifts to meet special needs. It would take a volume to give the details.

A new form of national pride was born of the calamity. The President turned back a gift of \$25,000 from a foreign firm, despite the fact that its business was in a measure American. The President believed that America could and would take care of its own. It amounted to the declaration of an ethical Monroe doctrine. But so highly developed is the sentiment of the universal brotherhood that the President's act gave positive offense. Foreign peoples felt keenly that they were deprived from aiding fellow men, victims of disaster. That the President rightly interpreted the will and ability of his fellow countrymen was proved by subsequent events. The vast sums given by Americans alone, were equal to the vast need of San Francisco. When the rehabilitated city has arisen from the ashes of the old San Francisco, it will be a matter of pride that gratitude for timely help in the hour of trial belongs only to the American brotherhood.

The total contributions, in round numbers equalled \$20,000,000. New York led the list with gifts of \$3,500,000. Philadelphia added \$900,000; Baltimore gave \$150,000; Washington, \$1,000,000; Chicago, \$2,500,000, and thus throughout the country gold was poured into the lap of the city. Of the total of \$2,500,000 appropriated by Congress, \$1,800,000 was expended within two weeks in supplies of every kind and in the transportation of troops, 2500 having been added to the 3000 men from the Presidio. Contributions through the Red Cross, under the appeal made by the President, exceeded \$3,000,000. The great



AWFUL RUSH OF FLAMES ON MARKET STREET, SKETCH MADE AMID  
BLAZING HOUSES AND FALLING WALLS



SAN FRANCISCO, FROM NOB HILL



generosity of the nation made serious privation impossible. Chicago, on the occasion of the great fire of '71, received in relief contributions, \$4,000,000 and under the wise expenditure of the citizens' relief committee, this sum was made to last for four years, during which time the refugees were absolutely safe from hardship. In San Francisco the number of homeless persons was twice as great as in Chicago. Nevertheless, the greatest sum available assured relief of a long enough time to rebuild a large percentage of the destroyed homes.

The increase of the government's contribution from the original \$1,000,000 to \$2,500,000 was due to the untiring efforts of the President. No American sympathized with the stricken city more deeply than did the Chief Executive of the nation and every possibility of his high office was realized both in the extent of the relief accorded and the promptness with which the work of mercy was done. This is well indicated in the nature of the messages sent from the White House to Congress as need developed.

The letter of Secretary Taft to the President recommended that Congress be requested to appropriate another \$1,000,000 to enable the War Department to carry on the work of relief at San Francisco.

Accompanying the Secretary's letter are reports from General Bell, chief of staff, Quartermaster General Humphrey, Commissary General Sharpe and Surgeon General O'Reilly, detailing just what has been done since the first word came that a disaster had overtaken San Francisco. These reports also embrace a complete recapitulation of all telegrams sent and received.

## SECRETARY TAFT'S LETTER.

Secretary Taft's letter summarizing the situation is as follows:

WAR DEPARTMENT, WASHINGTON,

April 21, 1906.

My Dear Mr. President:—The situation in San Francisco is such as to require an additional appropriation from Congress to meet the necessities of the people of that stricken city who are immediately in need of shelter and food. The War Department has rendered all the assistance possible, beginning its orders as soon as the first telegram was received from General Funston, about midnight of the 18th instant. Indeed, a telegram was sent by Assistant Secretary Oliver to General Funston immediately upon the receipt of the news of the earthquake, on the morning of the 18th, directing him to render all assistance possible.

From the night of the 18th of April all the available stores of the army of three departments have been used for relief purposes, assuming that the action of this department would be ratified by Congress in accordance with precedent in similar cases.

The memorandum of the general staff, which accompanies this letter, shows the telegrams received from General Funston, which gradually developed the extent of the terrible disaster, and increased the amount of supplies of every kind needed.

All subsistence and quartermaster's supplies and all medical stores of every kind which were in the military depots in San Francisco were destroyed, except the local supplies for the troops stationed at the post of the Presidio at San Francisco. Accordingly, everything had to be or-

dered from a distance. There are now on the way by special trains from every available and convenient point where they were stored 900,000 rations, which means the rations for 900,000 soldiers for one day. The value of these rations is estimated by the commissary general to be \$198,000. Two hundred thousand of these rations have probably reached San Francisco this morning, in charge of commissary officers.

The quartermaster's department have expressed by special train wall tents, conical tents, hospital tents and storage tents for the shelter of 100,000 people, 100,000 blankets, 7,500 mattresses, 11,500 bed sacks and 8,000 cots, part of which have already reached San Francisco from the immediate vicinity and all of which are hastening to the city by special trains, which have been given precedence over passenger trains.

The quartermaster's supplies already delivered in San Francisco or en route by special trains in charge of competent military quartermasters, amount in value to \$1,031,734.40.

The medical bureau of this department has sent five carloads of medical supplies from St. Louis by express in charge of competent medical officers and hospital stewards. The estimated value of these medical supplies is \$50,000.

It is estimated that the cost of transportation for all these supplies amounts to \$150,000, so that the cost of that which has already been done in the matter of relief for San Francisco is \$1,429,734.40.

#### ASKS ANOTHER MILLION.

"I have the honor to recommend that Congress be requested to appropriate \$1,000,000 more, in order to meet

the cost already incurred over and above the \$1,000,000 appropriated and to enable the War Department to purchase such additional supplies as may be needed for the purpose.

"The present resolution authorizes the expenditure of money for the relief of San Francisco. The supplies which have been sent have been taken out of the regular army depots, and were necessary for the support and use of the army. I respectfully suggest, therefore, that in the next resolution, which I hope Congress may pass, specific authority be given to the Secretary of War to use both the \$1,000,000 already appropriated and the amount which may be appropriated in the recommended resolution, either to purchase supplies for the relief of San Francisco, or to replace by purchase the supplies taken from the regular army stores for such relief purposes.

"I enclose the form of resolution which will accomplish the result sought.

"I attach the memorandum of the chief of staff, the report of the quartermaster general and the report of the commissary general, and their accompanying telegrams and estimates. I also attach a memorandum from the surgeon general as to his operations and needs.

"The loss of the valuable subsistence, quartermaster's and medical stores assembled in the depot at San Francisco for use at the Pacific posts and in the Philippines will require a very considerable deficiency estimate, in order that they, in addition to the stores now being used for the relief of San Francisco, may be replaced.

"The loss may be approximated as follows: Commissary stores, \$150,000; quartermaster's stores, \$2,941,472; medical stores, \$357,391; total \$3,448,863.

"I shall submit estimates for these at a later date.

"Very respectfully yours,

"WM. H. TAFT, Secretary of War.

"The President."



## PRESIDENT LEADS WORK OF SUCCOR

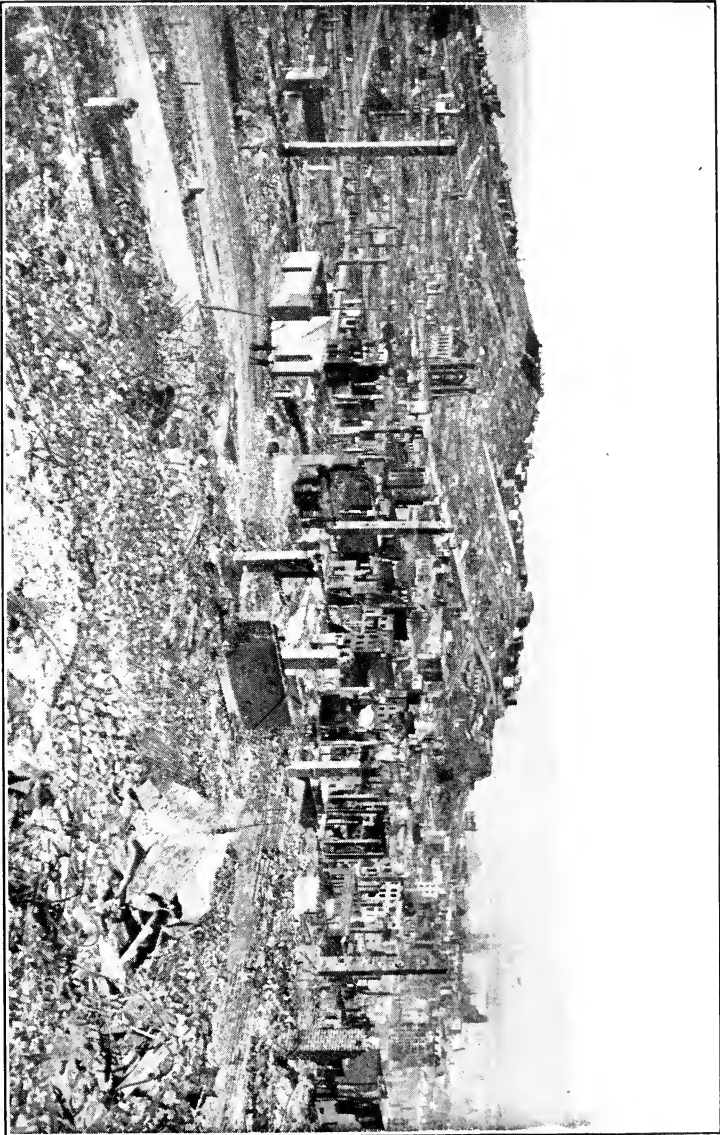
In her dark hours, San Francisco was accorded a memorable demonstration of the fact that mankind is a brotherhood. The cities of her own land, and the nations of the earth, so soon as the news of the tragedy had been flashed to them, thought only of aiding her. The last destructive tremor had hardly left the earth before millions, everywhere, felt the need of reaching out the helping hand. As, hour by hour, the extent of the catastrophe became more and more appalling, men everywhere became more and more impressed with the duty of the hour, to succor. The swift action, taken in thousands of separate and remote corners of the country, the subordination of every other cause to this, the wonderful response in every American community to appeals that were answered before they were made, will ever remain a splendid monument to the great human hearts that beat in American breasts throughout the length and breadth of the land.

In Hall of Congress the work of legislation was suspended in awe as the details of the dreadful visitation became known. The Congress, zealous of the purse strings of the treasury, niggardly in the opinion of many when clamor is made for appropriations, rose to the full stature of greatness when it swept aside every sentiment but to help the stricken city to the full extent of its need. In less space of time than it takes to tell it, a million of dollars had been placed in the hands of government agencies to succor the homeless, to feed the hungry, to care for the injured, to do whatever the need of the hour demanded. The President of the United States, quick in sympathy, vigorous in act, appealed to the whole nation to stand by San Francisco.

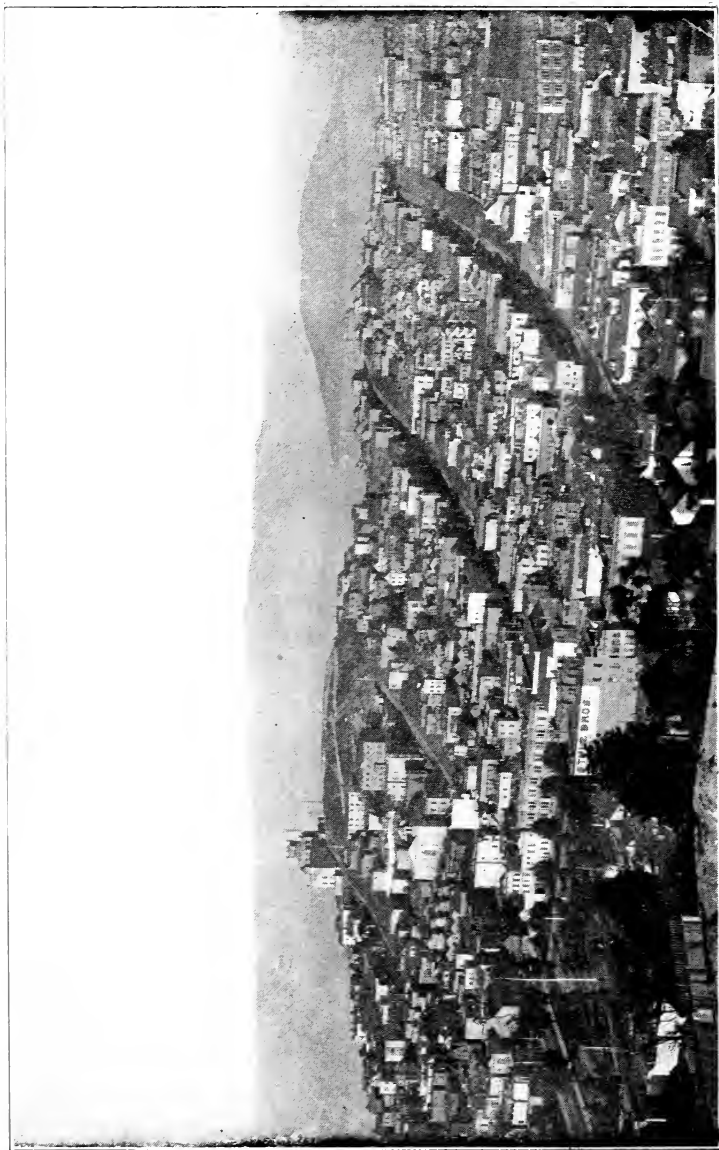
Before Congress or the President had acted, both the War Department and the Navy Department had thrown tortuous routine to the winds and soldiers of the regular army were playing a conspicuous part in quelling the lawless, guarding life and protecting property, as well as joining in the battle to check the conflagration. The hour demanded action; humanity's call had been heard and obeyed even before official Washington knew the extent of the catastrophe. When San Francisco rears some token of her gratitude the United States Army will be conspicuous among the agencies to be commemorated. And Brigadier General Frederick Funston, idol of the army, hero of the nation, will be heralded as the man who could not wait for orders when fellow-men, stricken by two of nature's deadliest weapons, cried out for help. When, finally, authority of every formal kind had been showered upon the doughty soldier, there was nothing his great force could do, more than they had been doing for twenty-four hours. San Francisco will never forget Funston.

In her pride the stricken city would gladly have refused outside aid, and, relying on her own valor and stamina, have undertaken, unaided, the appalling task of rising from cinders and debris, to be a new, and even a greater city. But the nation would not be denied. It was not in American hearts to stand by and see a struggle in which the odds were so uneven. It was a moment to prove that, while all mankind is a brotherhood, the American nation is a family whose ties are closer even than brother with brother. San Francisco could not have refused the proffered aid had she willed it. A thousand cities sent swift messages of sympathy, coupled with the request "What can we do?" Not one waited for the reply. They knew that hundreds of thousands would need shelter, would need food, would need re-





PANORAMA OF NOB HILL AFTER THE FIRE



PANORAMA OF SAN FRANCISCO, FROM TELEGRAPH HILL

lief in a hundred forms that money, and only money in generous supply, could furnish. They set to work to get the money.

American dollars have crossed the seas to Russia, to Ireland, to Italy, to Japan, to India, to Porto Rico, to any part of the earth where disaster has befallen. The sympathies of the nation are universal. No human cry has ever reached these shores and failed of speedy and generous answer. So also the cry has come from American cities. Stricken Chicago, stricken Boston, stricken Charleston, stricken Galveston, stricken Johnstown, stricken St. Louis, stricken Baltimore have all inspired generous impulses in every corner of the Union. Some have demanded that they be allowed to face, single-handed, crisis from earthquake, fire or flood, and with pride in their valor the nation has said, "So be it." But no American city has known such a tremendous blow as that which fell upon San Francisco. Every city seemed to feel that left alone the Queen City of the Slope could, beyond doubt, rise triumphant. But not a city, not a citizen, could let such an unaided fight be waged. No American could enjoy peace and plenty when here were want and desolation. So granaries, store houses, treasure boxes, everywhere were poured out, and even before San Francisco could rally her faculties to make answer to the inpouring queries, millions in money, tons of provisions, acres of canvas for shelter, physicians by the hundred, were speeding from every part of the continent. Thus some added horror in the holocaust of horror was prevented. Thus America, more than in any other manifestation, proved herself in the van of civilization, for the blood of the nation fertilizes the hearts and brains from which spring spontaneously, the highest of human endowments, the quality of mercy, the impulse of succor.

**PRESIDENT MAKES APPEAL.**

To describe in detail all of the work of relief would fill many volumes exceeding the limitations of this. Some broad generalities must enter. The central fact, however, was the appeal of the President to the nation and the part the national government played in this work. President Roosevelt only hesitated long enough to decide upon the agency which he would name to receive the funds. When he had selected the National Red Cross as the best equipped for the great task his message was soon before the country. This was the memorable appeal:

“In the face of so terrible and appalling a national calamity as that which has befallen San Francisco, the outpouring of the nation's aid should, as far as possible, be intrusted to the American Red Cross, the national organization best fitted to undertake such relief work. A specially appointed Red Cross agent, Dr. Edward Devine, starts to-day from New York to California, to co-operate there with the Red Cross branch in the work of relief.

“In order that this work may be well systematized, and in order that the contributions, which I am sure will flow in with lavish generosity, may be wisely administered, I appeal to the people of the United States, to all cities, chambers of commerce, boards of trade, relief committees, and individuals to express their sympathy and render their aid by contributiins to the American National Red Cross. They can be sent to Jacob H. Schiff, New York, Red Cross treasurer, or other local Red Cross treasurers, to be forwarded by telegraph from Washington to the Red Cross agents and officers in California.

“THEODORE ROOSEVELT”

The response was what could have been expected. San Francisco might have had many millions more had she not called a halt when the outpouring of funds had met her immediate needs. The millions that were placed at the disposal of the Red Cross absolutely assured her that there could be no famine and that many of the dreaded sequences of the disaster could not come. The greatest service to San Francisco, perhaps, on account of the vast sums available there was that the city officials and citizens had opportunity to devote effort and imagination toward grasping something of the extent of the disaster and centering thought and attention on the broad problem of the rehabilitation of their city. They knew that the immediate needs were being attended to through the generosity of the government, the good loyalty of fellow Americans and the efficiency of the Red Cross, and the Citizens' Committee and the army officers. It was a fairly blessed privilege to feel this. It will tell in the speed and thoroughness with which the city rises again in beauty and greatness. There can be no doubt that American cities had come to the rescue without the splendid action of the President. On the other hand there can be no doubt that this action quickened the work, gave it national scope and went down to the honor of the whole people. It also added another to the many reasons for which Theodore Roosevelt will be held in veneration by Americans as long as the Republic endures.

#### CONGRESS GIVES TWO AND A HALF MILLIONS.

As has been said, the Congress took action, even before the appeal of the President had been made. The House of Representatives was first to act. On Wednesday, April 18, this body adjourned as an expression of sor-

row and sympathy for San Francisco after adopting resolutions authorizing the Secretaries of War and the Navy to place all available equipment at the service of the stricken city. Representative Kahn, of California, presented the resolution, which was as follows:

“Resolved, By the Senate and House of Representatives of the United States of America, in Congress assembled, That the Secretary of War be, and he is hereby, authorized and directed to loan to the mayors of San Francisco, Berkeley, Oakland, Alameda and such other cities on the Pacific coast as have sustained damage, under such regulations and restrictions as he may deem proper, a sufficient number of tents to temporarily shelter such persons as may have been rendered homeless and lost property by the earthquake of this date, and attending conflagration, and to issue rations, supplies and render such other aid to such as are destitute and unable to provide for themselves.

“Be it further provided, That the Secretary of the Treasury and the Secretary of the Navy are also hereby directed to co-operate with the Secretary of War in extending relief and assistance to the stricken people herein referred to to the extent of the use of the naval vessels, revenue cutters and supplies under their control on the Pacific coast.”

Coupled with this was a further act, indicative of the deep feeling which pervaded the House of Representatives as the result of the appalling news, which at this time only reached the nation's capital in fragmentary form. Mr. Gill, of Maryland, who offered the resolution of sympathy of the House to the people of Baltimore after the terrible conflagration which destroyed that city, presented the following resolution:

“Resolved, by the House of Representatives, That the sympathy of the House is hereby extended to the people of the State of California in this, the hour of their great disaster and suffering, caused by the extraordinary revolution of nature in that State, and that as an expression of our profound sympathy we do now adjourn.”

By the following day the whole country had learned of the extent of the original disaster and was aware that the beautiful city was at the mercy of flames. In both the Senate and House of Representatives further steps were taken to show that the catastrophe to San Francisco was to be regarded as a national catastrophe. The Senate adopted a resolution, carrying an appropriation of \$500,000, for relief. In the House of Representatives news of this action resulted in a substitute which doubled the sum that had been named by the Senate, and the next day by similar action, the million, likewise, was doubled by a second resolution. The following resolution was unanimously adopted and stands as the part the Congress played in the patriotic effort made to help San Francisco:

“Joint resolution for the relief of sufferers from earthquake and conflagration on the Pacific coast.

“Resolved, by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of War is hereby authorized and directed to procure in open market or otherwise subsistence and quartermaster supplies belonging to the military establishment and available, and issue the same to such destitute persons as have been rendered homeless or are in needy circumstances as a result of the earthquake which occurred April 18, and the attending conflagration, and in executing this joint resolution the Secretary of War is directed to co-

operate with the authorities of the State of California and the mayors of the cities of San Francisco, Berkeley, Oakland, Alameda, and such other cities on the Pacific coast as may have sustained damages.

“Be it further resolved, That the Secretary of the Treasury, Secretary of the Navy, and the Secretary of Commerce and Labor are hereby directed to co-operate with the Secretary of War in extending relief and assistance to the stricken people herein referred to to the extent of the use of the naval vessels, revenue cutters, and other vessels and government supplies under their control on the Pacific coast.

“Be it further resolved, That to enable the Secretary of War to execute the provisions of this joint resolution there is hereby appropriated out of any money in the Treasury not otherwise appropriated the sum of \$1,000,000, to be expended under the direction and in the discretion of the Secretary of War.”

#### SHOCKED BY AWFUL NEWS.

With millions of Americans the President was shocked beyond expression at the first reports of the disaster and hoped against hope that they would prove to have been exaggerated.

His first message was to Mayor Eugene E. Schmitz, in which he said:—

“Hear rumors of great disaster through an earthquake at San Francisco, but know nothing of the real facts. Call upon me for any assistance I can render.

“THEODORE ROOSEVELT.”

Later in the day he sent this despatch to Mayor Schmitz:—

“I share with all our people the horror felt at the



catastrophe that has befallen San Francisco, and the most earnest sympathy with your citizens. If there is anything that the Federal government can do to aid you it will be done."

He also sent this message to Governor Pardee:—

"It was difficult at first to credit the news of the calamity that had befallen San Francisco. I feel the greatest concern and sympathy for you and the people, not only of San Francisco, but of California, in this terrible disaster. You will let me know if there is anything that the national government can do."

Once the President had grasped the fact that the catastrophe was real, he went to work for San Francisco with characteristic energy. Within twenty-four hours he had formulated an appeal to Congress, had issued the above appeal to the nation, had directed the National Red Cross to direct the rescue work, had named Secretary of Commerce Metcalf to go to San Francisco as his personal representative, had inspired the War and Navy Departments to redoubled activity and in every act demonstrated a grasp of the situation, of the needs of the hour, all in keeping with what the nation has come to expect of one of the greatest of its executives.

The original appropriation by Congress of \$1,000,000, which, as has been recounted, was increased to \$1,500,000, was swelled to the magnificent sum of \$2,500,000 by a further action. The President's appeal went far toward setting the whole nation to raising money and to him some of the credit must be given for the amazing outpouring of gold, which, before it had stopped, had netted \$20,000,000 for the work of relief.

**RELIEF MESSAGE TO CONGRESS.**

Of the several messages of the President, one sample may be given to show the sympathetic, yet calm business-like tone pervading them, eloquent of the man who is master of himself and the crisis confronting him:

“TO THE SENATE AND HOUSE OF REPRESENTATIVES:—

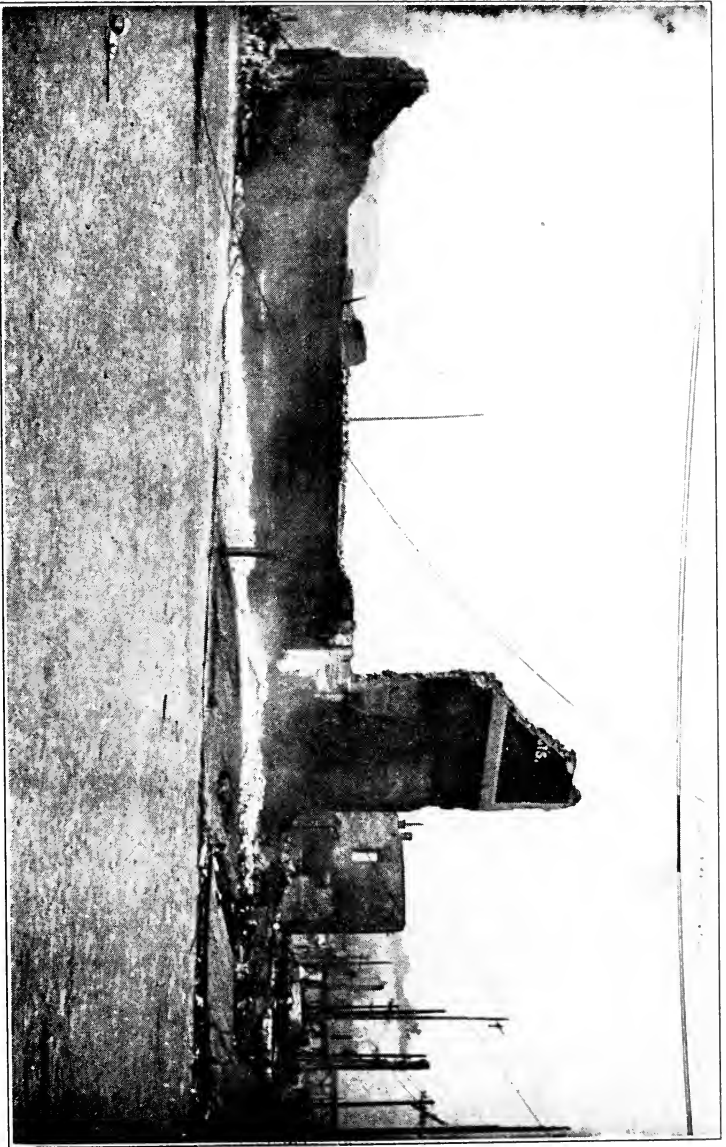
“I submit herewith a letter of the Secretary of War, with accompanying documents, including a form of a resolution suggested for passage by the Congress.

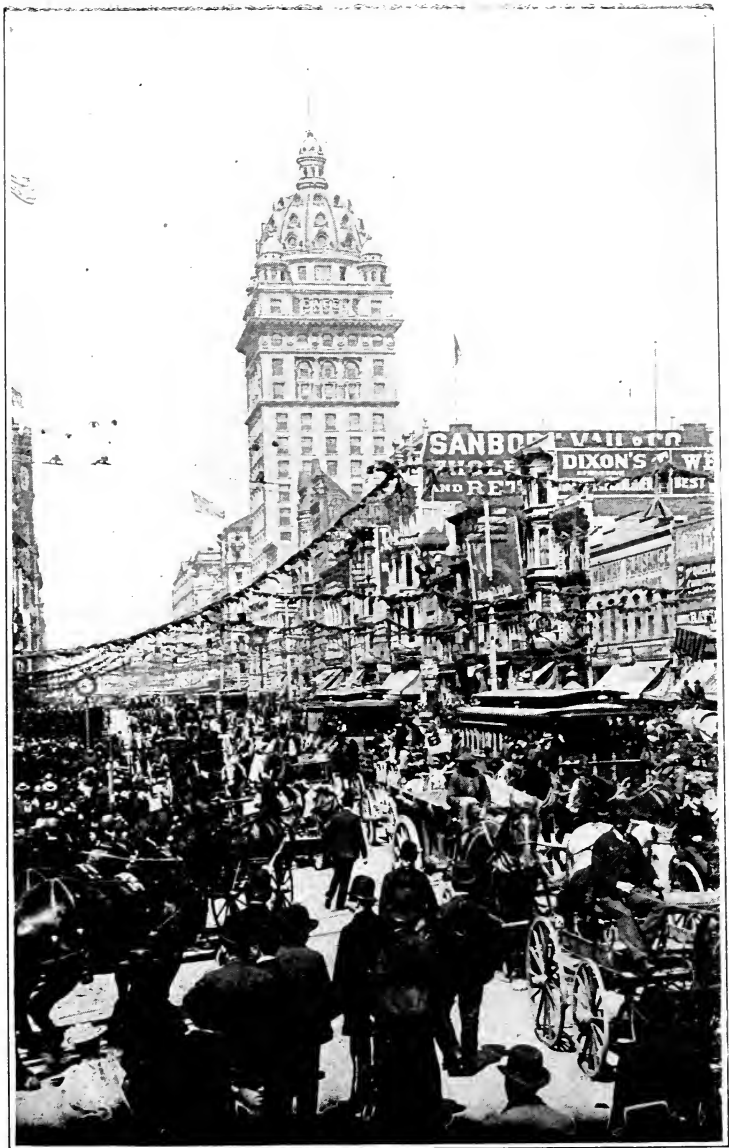
“This letter refers to the appalling catastrophe which has befallen San Francisco and neighboring cities, a catastrophe more appalling than any other of the kind that has befallen any other portion of our country during its history. I am sure that there is need on my part of no more than a suggestion to the Congress in order that this resolution may be at once passed. But I urge that instead of appropriating a further sum of \$1,000,000, as recommended by the Secretary of War, the appropriation be for \$1,500,000. The supplies already delivered or en route for San Francisco approximate in value \$1,500,000, which is more than we have the authority in law as yet to purchase. I do not think it safe for us to reckon upon the need of spending less than a million in addition.

“Large sums are being raised by private subscription in this country, and very generous offers have been made to assist us by individuals of other countries, which requests, however, I have refused, as in my judgment there is no need of any assistance from outside our own borders—this refusal, of course, in no way lessening our deep appreciation of the kindly sympathy which has prompted such offers.

“The detailed account of the action of the War Department is contained in the appendices to the letter of the

SAN FRANCISCO AFTER THE FIRE. CORNER FOLSOM AND EAST STREETS.





VIEW IN MARKET STREET, SAN FRANCISCO

Secretary of War. At the moment our concern is purely with meeting the terrible emergency of the moment. Later I shall communicate with you as to the generous part which I am sure the national government will take in meeting the more permanent needs of the situation, including, of course, rebuilding the great governmental structures which have been destroyed.

“I hope the action above requested can be taken to-day.

“(Signed) THEODORE ROOSEVELT.

“THE WHITE HOUSE, April 21, 1906.”

#### TRIBUTE TO SAN FRANCISCO.

The President's first plan was to have the Red Cross in absolute control of the situation but it developed that no single agency could undertake the vast task, particularly as the contributions, being sent from thousands of sources, could not be turned into a single channel. The President had named Dr. E. T. Devine as special agent of the Red Cross. His arrival at San Francisco was followed by misunderstanding which threatened to embrace all concerned whereupon the President, grasping the fact that he had made a mistake, made this public announcement:

“To the Public:—

“When the news of the dreadful disaster at San Francisco first came it was necessary to take immediate steps to provide in some way for the receipt and distribution of the sums of money which at once poured in for the relief of the people of San Francisco. At the moment no one could fortell how soon it would be possible for the people of San Francisco themselves to organize; and to tide over the interval the American National Red Cross Association was designated to receive and disburse the funds. But the peo-

ple of San Francisco, with an energy and self-reliant courage, a cool resourcefulness and a capacity for organized and orderly endeavor which are beyond all praise have already met the need through committees appointed by the mayor of the city, former Mayor James D. Phelan being chairman of the finance committee. The work of these committees has been astonishing in its range, promptness and efficiency.

"As I am informed by Major General Greely, although all local transportation was destroyed, as well as practically every supply store in the city, these local committees, with the help of the army, have succeeded in caring for three hundred thousand homeless people in the last five days. Thanks to their efforts, no individual is now suffering severely for food, water or temporary shelter. This work has been done with the minimum of waste and under conditions which would have appalled men less trained in business methods, endowed with less ability, or inspired with any but the highest motives of humanity and helpfulness.

"The need of employing the Red Cross, save as an auxiliary, has passed, and I urge that hereafter all contributions from any source be sent direct to James D. Phelan, chairman Finance Committee, San Francisco. Mr. Devine, of the Red Cross, will disburse any contributions sent to him through former Mayor Phelan and will work in accord with him in all ways."

This tactful action, coupled with its tribute to San Francisco, relieved the monetary tension and all thereafter went smoothly. The President throughout his action in the gravest hour that ever has confronted an American city added to the high esteem in which he is held, irrespective of political differences of opinion, from ocean to ocean.

## INSURANCE THE CITY'S SALVATION.

San Francisco is rising from ashes through the faith and valor of her people, but much of the success of their efforts is to be traced to the enormous assistance which came from the millions poured into the city by the world's insurance companies. The principle of insuring valuables had its birth in a small risk, assumed exclusively against the lives of individuals. Probably no business venture, launched in the history of the world, provoked so great a storm of ridicule and abuse as this. It was attacked from the practical standpoint as an impossible undertaking; it was attacked from every possible worldly point of view, and the discussion, pro and con, finally, in some sections, became a matter of religious controversy. Its opponents found texts for their attacks in Holy Writ. The wonder is that the business of insuring had not died a boring. Despite the volcanic character of its reception the principle survived. Probably in all of the history of the development of enterprise there is no chapter to equal that which recounts the tremendous growth of this business. Its story is worth many volumes, devoted to the romantic aspects of the development with never a reference to figures. Perhaps, one day, a chronicler will rise, to embalm the story of a once derided, now a universally applied principle. Indeed it would take several volumes alone to describe the endless field now covered in insurance risks, too long to be even roughly treated here. Enough to say that the underlying principle of insurance has been proved to be sound; that every man accepts the onetime ridiculed dogma that he can be made secure against loss by payment of a modest premium against the full extent of any possible calamity;

and that this can be accomplished with a margin of profit for the insuring company, which has been the marvel and the envy of seekers of fortune in almost every other field.

San Francisco, by dint of fire and earthquake, has heretofore learned the value of insurance. The present catastrophe has taught the lesson, once more, not only to San Francisco, but universally. The companies involved will, beyond doubt, get back their losses in the increased business that will accrue as a result of this appalling object lesson. They have done generously by the stricken city. From the moment that the tremendous extent of the disaster became apparent there was manifested this spirit. Few conflagrations have been complicated by the double work of destruction of fire and earthquake and this fact opened the way for endless technicalities. San Francisco was cheered, while the great fire was still sweeping through the city by the announcement that technicalities would be waived. The great companies which made this announcement are to be accounted among the notable factors in the rehabilitation. When San Francisco stands again, with the awful events of April, 1906, only memories a tremendous share of the credit will belong to these great business concerns, which put no quibble in the way of payment of losses, despite the fact that jointly tens of millions could have been saved to their treasuries. In the case of some of the companies involved, payment for damage by earthquake was precluded by the terms of their charters, on a basis of the standard fire insurance policy, which is that of New York. These companies, by accepting the havoc of the fire as final, without heeding the work of the earthquake, manifested a spirit of generosity in keeping with the attitude of the whole nation toward San Francisco in her hour of trial.

Premiums paid on insurance in San Francisco, in 1905,



amounted to \$2,986,540. On an estimated average rate of 70 cents this represented a total amount of insurance carried of \$426,648,571. One-half less than this amount proved to be the amount of the liabilities, a total of \$250,000,000. Fortunately the insurance on the Pacific Coast is carried only in the large concerns. This fact proved to be important.

The extent of the liabilities is represented in the following table, which gives the premiums paid by the insured of San Francisco for the year of the fire. The face value of the policies is readily obtainable on a basis of seventy cents as the average rate:

## CALIFORNIA COMPANIES.

| <i>Name of Company and Location.</i>      | <i>Net San Francisco Premiums.</i> |
|-------------------------------------------|------------------------------------|
| California, San Francisco .....           | \$22,585                           |
| Fireman's Fund, San Francisco .....       | 77,608                             |
| Home Fire and Marine, San Francisco ..... | 31,103                             |
| Pacific Underwriters, San Francisco ..... | 20,632                             |
|                                           | <hr/>                              |
| Total, California .....                   | \$151,928                          |

## OTHER STATE COMPANIES.

|                                        |          |
|----------------------------------------|----------|
| Aetna, Hartford .....                  | \$44,789 |
| Agricultural, Watertown, N. Y. ....    | 16,343   |
| Alliance, Philadelphia .....           | 15,801   |
| American, Boston .....                 | 12,348   |
| American Fire, Philadelphia .....      | 27,559   |
| American, Newark .....                 | 18,962   |
| American Central, St. Louis .....      | 19,881   |
| Atlanta-Birmingham Fire, Atlanta ..... | 6,289    |
| Austin Fire, Austin, Texas .....       | 4,337    |

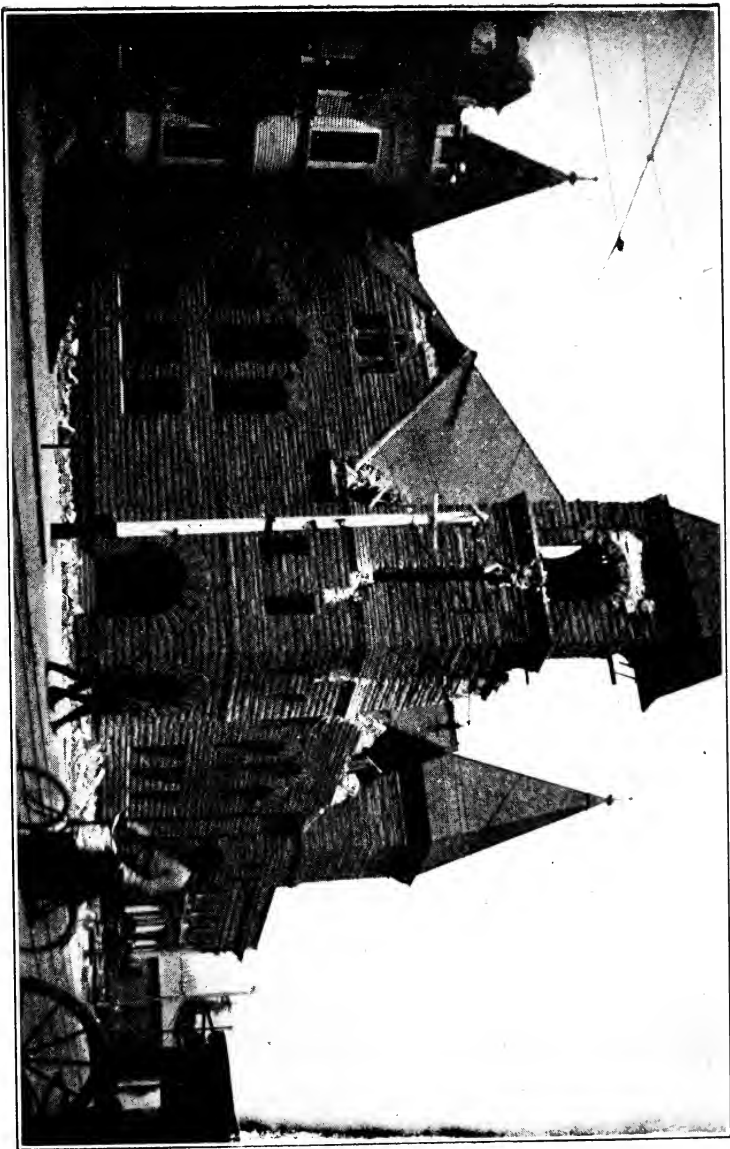
|                                                             |        |
|-------------------------------------------------------------|--------|
| British-American, New York .....                            | 3,013  |
| Caledonian-American, New York .....                         | 8,836  |
| Calumet, Chicago .....                                      | 13,824 |
| Citizens', St. Louis .....                                  | 17,588 |
| Colonial Fire Underwriters, Hartford .....                  | 12,245 |
| Commercial Union Fire, New York .....                       | 4,110  |
| Concordia Fire, Milwaukee .....                             | 6,345  |
| Connecticut Fire, Hartford .....                            | 34,197 |
| Continental, New York .....                                 | 33,936 |
| Delaware, Philadelphia .....                                | 12,551 |
| Dutchess, Poughkeepsie .....                                | 14,167 |
| Eagle Fire, New York .....                                  | 11,968 |
| Equitable Fire and Marine, Providence .....                 | 5,817  |
| Fire Association, Philadelphia .....                        | 28,778 |
| Franklin Fire, Philadelphia .....                           | 20,919 |
| German-American, New York .....                             | 44,589 |
| Germania Fire, New York .....                               | 46,552 |
| German Alliance, New York .....                             | 7,384  |
| German, Freeport, Ill .....                                 | 52,802 |
| German Fire, Peoria, Ill .....                              | 14,752 |
| German National, Chicago .....                              | 15,706 |
| Girard Fire and Marine, Philadelphia .....                  | 13,747 |
| Glens Falls, Glens Falls, N. Y. ....                        | 15,483 |
| Globe & Rutgers, New York .....                             | 16,028 |
| Hanover Fire, New York .....                                | 23,167 |
| Hartford Fire, Hartford .....                               | 72,236 |
| Home, New York .....                                        | 39,779 |
| Indemnity Fire, New York .....                              | 4,781  |
| Insurance Company of North America, Philadel-<br>phia ..... | 48,938 |
| Mercantile Fire and Marine, Boston .....                    | 13,020 |
| Michigan Fire and Marine, Detroit .....                     | 7,935  |

|                                                                    |        |
|--------------------------------------------------------------------|--------|
| Milwaukee Mechanics, Milwaukee .....                               | 34,269 |
| Nassau Fire, New York .....                                        | 7,391  |
| National Fire, Hartford .....                                      | 30,201 |
| National Union, Pittsburg .....                                    | 20,936 |
| New Hampshire Fire, Manchester .....                               | 8,928  |
| New York Underwriters, Hartford .....                              | 73,552 |
| New York Fire, New York .....                                      | 6,903  |
| Niagara Fire, New York .....                                       | 33,126 |
| Northwestern National, Milwaukee .....                             | 11,039 |
| North German Fire, New York .....                                  | 11,627 |
| North River, New York .....                                        | 9,030  |
| Orient, Hartford .....                                             | 14,373 |
| Pelican, New York .....                                            | 7,253  |
| Pennsylvania Fire, Philadelphia .....                              | 55,189 |
| Phenix, Brooklyn .....                                             | 61,844 |
| Phœnix, Hartford .....                                             | 28,049 |
| Philadelphia Underwriters, Philadelphia .....                      | 8,921  |
| Providence-Washington, Providence, R. I., ....                     | 15,756 |
| Queen Insurance Company of America, New<br>York .....              | 24,054 |
| Queen City Fire, Sioux Falls, S. D. ....                           | 1,992  |
| Rochester German, Rochester, N. Y. ....                            | 10,701 |
| Security New Haven .....                                           | 6,151  |
| Security Fire, Baltimore .....                                     | 7,817  |
| Springfield Fire and Marine, Springfield, Massa-<br>chusetts ..... | 26,160 |
| Spring Garden, Philadelphia .....                                  | 9,519  |
| St. Paul Fire and Marine, St. Paul .....                           | 18,705 |
| Teutonia, New Orleans .....                                        | 5,315  |
| Traders', Chicago .....                                            | 58,096 |
| Union, Philadelphia .....                                          | 8,729  |
| United Firemen's, Philadelphia .....                               | 11,045 |

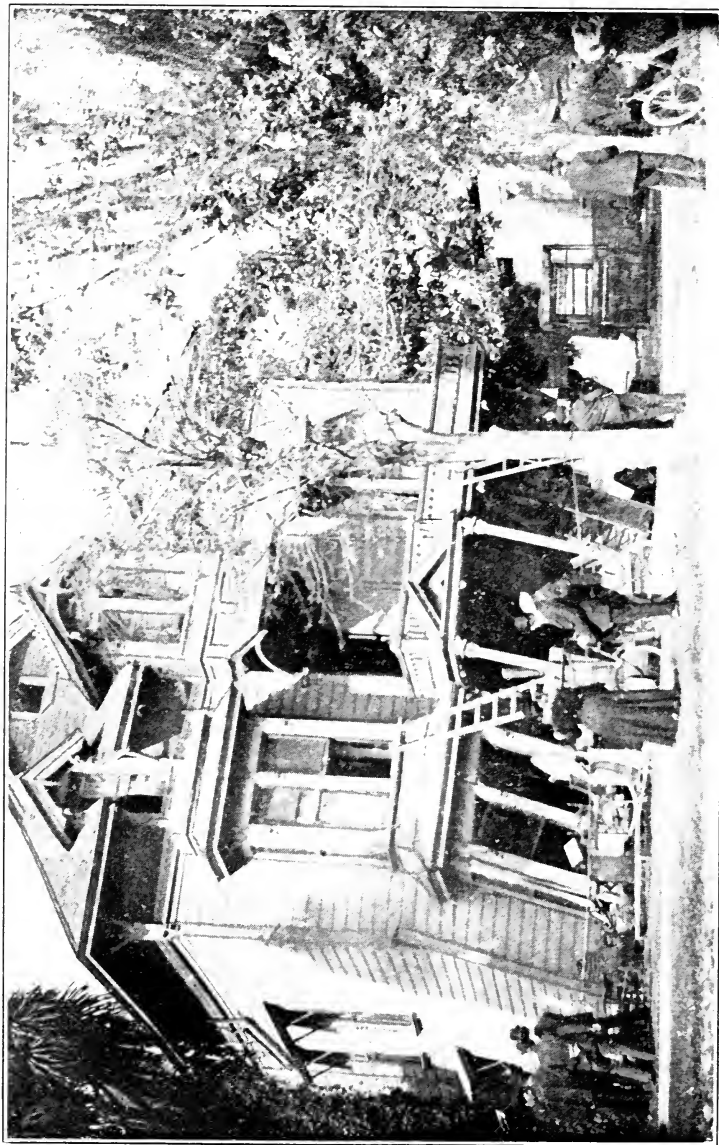
|                                         |             |
|-----------------------------------------|-------------|
| Westchester Fire, New York .....        | 17,573      |
| Williamsburgh City Fire, Brooklyn ..... | 18,036      |
|                                         | <hr/>       |
| Total Other-State .....                 | \$1,493,782 |
|                                         | <hr/>       |
| Total American .....                    | \$1,645,710 |

## FOREIGN COMPANIES.

|                                               |        |
|-----------------------------------------------|--------|
| Aachen & Munich Fire, Aix la Chapelle .....   | 49,421 |
| Alliance Assurance, London .....              | 43,749 |
| Atlas Assurance, London .....                 | 39,792 |
| Austrian Phœnix, Vienna .....                 | 30,558 |
| British America Assurance, Toronto .....      | 13,333 |
| Caledonian, Edinburgh .....                   | 47,325 |
| Commercial Union Assurance, London .....      | 49,002 |
| Hamburg, Bremen Fire, Hamburg .....           | 56,180 |
| Law Union & Crown, London .....               | 28,030 |
| Liverpool and London and Globe, Liverpool ... | 56,878 |
| London Assurance, London .....                | 87,719 |
| London and Lancashire Fire, Liverpool .....   | 68,558 |
| Manchester Assurance, London .....            | 5,639  |
| New Zealand, Auckland .....                   | 29,299 |
| North British & Mercantile, London .....      | 44,569 |
| North German Fire, Hamburg .....              | 58,946 |
| Northern Assurance, London .....              | 53,690 |
| Norwich Union Fire, Norwich .....             | 30,395 |
| Palatine, London .....                        | 34,209 |
| Phœnix Assurance, London .....                | 53,830 |
| Prussian National, Stettin .....              | 17,934 |
| Rhine & Moselle, Strasburg .....              | 59,649 |
| Royal, Liverpooll .....                       | 83,601 |



A CHURCH TOWER DEMOLISHED BY THE EARTHQUAKE /



FRAME RESIDENCE DEMOLISHED BY THE EARTHQUAKE

|                                            |             |
|--------------------------------------------|-------------|
| Royal Exchange Assurance, London .....     | 56,529      |
| Scotch Underwriters, Edinburgh .....       | 4,698       |
| Scottish Union & National, Edinburgh ..... | 21,916      |
| State Fire, Liverpool .....                | 15,491      |
| Sun Insurance Office, London .....         | 40,019      |
| Svea Fire, Gothenburg .....                | 25,955      |
| Transatlantic Fire, Hamburg .....          | 73,947      |
| Union Assurance Society, London .....      | 43,302      |
| Western Assurance, Toronto .....           | 17,458      |
|                                            | <hr/>       |
| Total foreign .....                        | \$1,340,830 |
|                                            | <hr/>       |
| Grand total for 1905, 105 companies .....  | \$2,986,540 |

## SAN FRANCISCO LOSSES.

The total loss was estimated at \$250,000,000, and the loss to the insurance companies at \$175,000,000.

Below are presented the amounts the respective fire insurance companies estimated they would lose by the San Francisco conflagration, compiled from official statements by the companies:

|                                                        | Net Amount<br>of Loss. |
|--------------------------------------------------------|------------------------|
| Aetna Insurance Co. of Hartford, Conn. ....            | \$2,700,000            |
| Agricultural Insurance Co. of Watertown,<br>N. Y. .... | 500,000                |
| Alliance Insurance Co., of Philadelphia .....          | 500,000                |
| American Fire Insurance Co. of Philadelphia            | 500,000                |
| American Central Insurance Co. of St. Louis            | 500,000                |
| American Insurance Co. of Newark .....                 | 1,000,000              |
| Atlanta-Birmingham Insurance Co. of At-<br>lanta ..... | 150,000                |

|                                                                   |           |
|-------------------------------------------------------------------|-----------|
| Atlas Insurance Company of London . . . . .                       | 1,250,000 |
| Austin Fire Insurance Co. of Austin, Tex. . .                     | 359,000   |
| British America Assurance Co. of Toronto . .                      | 275,000   |
| British American Insurance Co. of New York                        | 75,000    |
| Caledonian Insurance Co. of Scotland . . . . .                    | 1,193,482 |
| Caledonian-American Insurance Co. of New<br>York . . . . .        | 50,000    |
| Camden Fire Insurance Co. of Camden,<br>N. J. . . . .             | 360,000   |
| Citizens' Insurance Co. of St. Louis . . . . .                    | 165,000   |
| Colonial Assurance Co. of New York . . . . .                      | 10,000    |
| Commonwealth Insurance Co. of New York                            | 39,000    |
| Continental Insurance Co. of New York . . . .                     | 1,926,000 |
| Concordia Fire Insurance Co. of Milwaukee .                       | 200,000   |
| Delaware Insurance Co. of Dover . . . . .                         | 8,000     |
| Delaware Insurance Co. of Philadelphia . . . .                    | 350,000   |
| Dutchess Insurance Company of Poughkeepsie                        | 175,000   |
| Eagle Fire Insurance Co. of New York . . . . .                    | 300,000   |
| Empire City Fire Insurance Co. of New York                        | 40,000    |
| Equity Fire Insurance Co. of Toronto . . . . .                    | 7,500     |
| Europa Insurance Co. of Berlin . . . . .                          | 3,000     |
| Federal Lloyds of Chicago . . . . .                               | 15,500    |
| Fire Association of Philadelphia . . . . .                        | 1,100,000 |
| Franklin Fire Insurance Co. of Philadelphia                       | 800,000   |
| German Alliance Insurance Co. of New York                         | 225,000   |
| Germania Fire Insurance Co. of New York . .                       | 2,000,000 |
| German Insurance Co. of Freeport, Ill . . . . .                   | 1,500,000 |
| German-American of New York . . . . .                             | 2,000,000 |
| Girard Fire & Marine Insurance Co. of Phila-<br>delphia . . . . . | 450,000   |
| Glens Falls Insurance Co. of Glens Falls,<br>N. Y. . . . .        | 1,000,000 |



|                                                                  |           |
|------------------------------------------------------------------|-----------|
| Globe & Rutgers Insurance Co. of New York                        | 450,000   |
| Hamburg-Bremen of Hamburg, Germany ..                            | 1,100,000 |
| Hanover Insurance Co. of New York .....                          | 700,000   |
| Hartford Fire Insurance Co. of Hartford,<br>Conn. ....           | 5,750,000 |
| Home Insurance Co. of New York .....                             | 1,500,000 |
| Insurance Co. of North America .....                             | 2,000,000 |
| Insurance Co. of State of Pennsylvania ....                      | 8,250     |
| Indemnity Fire Insurance Co. of New York                         | 85,000    |
| Independent Cash Mutual Fire Ins. Co. of<br>Toronto .....        | 1,500     |
| Indianapolis Insurance Co. of Indianapolis ..                    | 25,000    |
| Individual Underwriters' Association (John<br>R. Waters) .....   | 214,625   |
| Individual Fire Underwriters of St. Louis ..                     | 25,000    |
| Jefferson Fire Insurance Co. of Philadelphia                     | 20,000    |
| La Confiance Insurance Co. of Paris .....                        | 2,000     |
| La Metropole Insurance Co. of Paris .....                        | 5,000     |
| La National Insurance Co. of Paris .....                         | 3,500     |
| La Paternelle Insurance Co. of Paris .....                       | 7,000     |
| La Polar of Bilboa, Spain .....                                  | 3,500     |
| Le Soleil Insurance Co. of Paris .....                           | 3,000     |
| London Assurance Corporation of London ..                        | 3,750,000 |
| London & Lancashire Insurance Co. of Liver-<br>pool .....        | 3,500,000 |
| L'Union Insurance Co. of Paris .....                             | 6,500     |
| L'Urbaine Insurance Co. of Paris .....                           | 3,500     |
| Liverpool & London & Globe Ins. Co. of Liver-<br>pool, Eng. .... | 3,500,000 |
| Louisville Insurance Co. of Louisville, Ky. ..                   | 18,600    |
| Michigan Fire & Marine Insurance Co. of De-<br>troit, Mich. .... | 200,000   |

|                                                                    |           |
|--------------------------------------------------------------------|-----------|
| National Insurance Co. of Hartford, Conn. . .                      | 1,500,000 |
| National Union Fire Insurance Co. of Pitts-<br>burg . . . . .      | 750,000   |
| New Brunswick Fire Ins. Co. of New Bruns-<br>wick, N. J. . . . .   | 25,000    |
| New Hampshire Fire Insurance Co. of Man-<br>chester, N. H. . . . . | 600,000   |
| New York Insurance Association . . . . .                           | 2,000     |
| New York Fire Insurance Company . . . . .                          | 200,000   |
| Niagara Insurance Co. of New York . . . . .                        | 1,000,000 |
| North German Insurance Co. of New York . .                         | 160,000   |
| North River Insurance Co. of New York . .                          |           |
| Northern Assurance Co. of London . . . . .                         | 2,000,000 |
| Northwestern National Ins. Co. of Milwaukee                        | 300,000   |
| Norwich Union Fire Insurance Society of<br>England . . . . .       | 1,200,000 |
| Orient Insurance Co. of Hartford, Conn. . .                        | 700,000   |
| Pacific Insurance Co. of New York . . . . .                        | 30,000    |
| Pelican Insurance Co. of New York . . . . .                        | 250,000   |
| Peter Cooper Fire Insurance Co. of New York                        | 35,000    |
| Phenix Insurance Co. of Brooklyn . . . . .                         | 1,500,000 |
| Phœnix Assurance Co. of London . . . . .                           | 1,600,000 |
| Phœnix Insurance Co. of Hartford . . . . .                         | 1,110,000 |
| Providence-Washington Insurance Co. of<br>Providence . . . . .     | 600,000   |
| Queen City Fire Insurance Co. of Sioux Falls,<br>Iowa . . . . .    | 100,000   |
| Queen Insurance Co. of America of New<br>York . . . . .            | 1,250,000 |
| Rochester German Insurance Co. of Rochester                        | 700,000   |
| Royal Exchange Assurance of London . . . .                         | 2,750,000 |
| Royal Insurance Co. of Liverpool, Eng. . . .                       | 3,750,000 |

|                                                              |           |
|--------------------------------------------------------------|-----------|
| Scottish Union & National Ins. Co. of Edinburgh .....        | 1,00,000  |
| Security of New Haven .....                                  | 300,000   |
| Springfield Fire & Marine Ins. Co. of Springfield Mass. .... | 1,676,455 |
| Standard of Amsterdam .....                                  | 3,500     |
| Stuyvesant Insurance Co. of New York ....                    | 102,500   |
| St. Paul Fire & Marine Insurance Co. ....                    | 1,000,000 |
| Spring Garden Insurance Co. of Philadelphia                  | 250,000   |
| Sun Insurance Office of London, Eng. ....                    | 1,200,000 |
| Teutonia Insurance Co. of New Orleans ....                   | 40,000    |
| Union Insurance Company of Philadelphia ..                   | 129,000   |
| United Firemen's Insurance Co. of Philadelphia .....         | 200,000   |
| Virginia State Insurance Co. of Richmond, Va. ....           | 7,000     |
| Western Assurance Co. of Toronto .....                       | 400,000   |
| Weschester Insurance Co. of New York ....                    | 600,000   |
| Williamsburgh City Insurance Co. of New York .....           | 500,000   |

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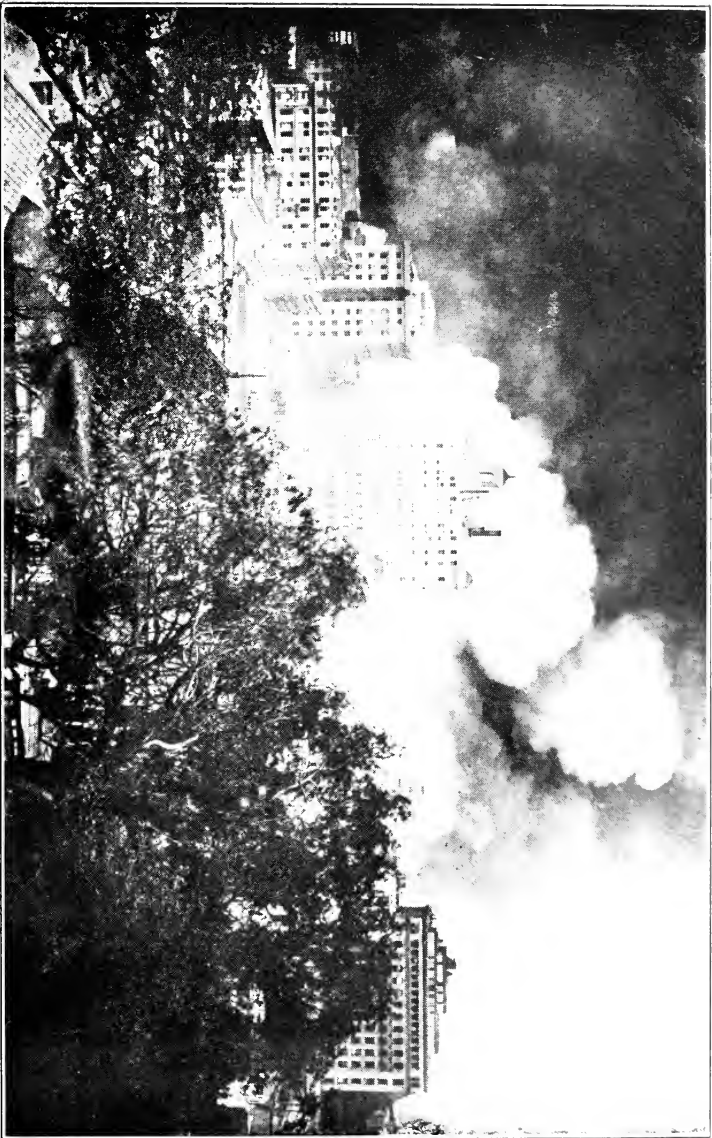
## SCHMITZ AND FUNSTON, SAN FRANCISCO HEROES.

Among the heroes who will go down to fame for the part they played in the struggle to save San Francisco none will rival Brigadier General Frederick Funston, U. S. A., commanding the Department of California. The name of Funston is a household word in America. He is perhaps the most picturesque soldier of fortune alive to-day. His military exploits had made him famous before he ever wore the uniform of an officer in the regular army. Cuba will always remember him, and in the brilliant roster of those who joined the volunteer hosts on the outbreak of the Spanish-American War no name conjures more memories of gallant deeds than his. The struggle for liberty waged by the people of the Pearl of the Antilles appealed strongly to this native of Ohio, resident of everywhere, lover of Kansas. His military record opened, then, in Cuba, where Funston, as chief of artillery for the insurgents repeatedly struck terror to the Spanish foe by daring work with his guns. Loyally he struggled in behalf of Cuba and with joy he received the news that, after long procrastination, the American Republic, stung to action by the destruction of the Maine, had declared war on the Spanish oppressor. Funston may next be found speeding back to the States and soon after he became Colonel of the 20th Kansas Volunteers, and was shortly on the way to the Philippines. Funston had, in this 20th Kansas, a regiment that wanted fighting. It was well the regiment was of this type, for its commander kept it busy. The long Philippine campaign offered comparatively few opportunities for brilliant feats. It offered none to the commander who sat and waited for his chance. Fun-

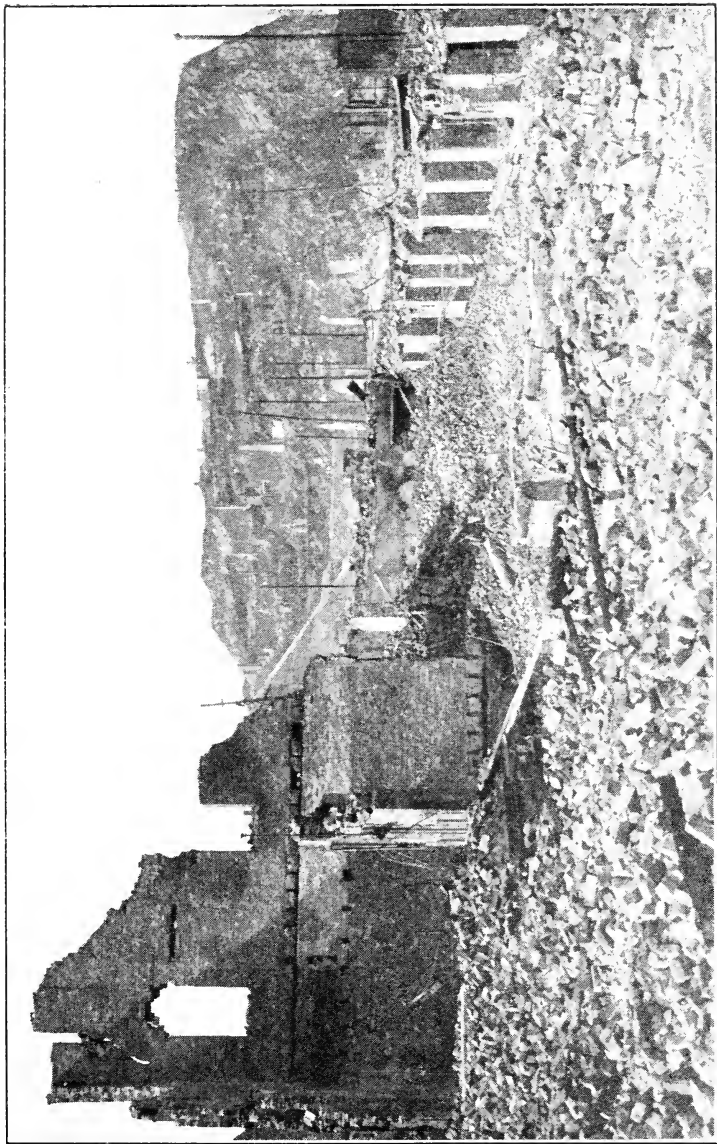
ston made them, made them so fast that his Kansans came to believe that there wouldn't a man of them ever see Kansas again.

Training in the guerrilla warfare in which he had participated in Cuba fitted Funston for the peculiar nature of the work which fell to the lot of the soldier in the Philippines. It demanded bravery and powers of initiative, of ingenuity and resourcefulness, far beyond anything that possibly could be instilled in West Point class rooms. He and his Kansans swept through the brush of whatever district they were called upon to pacify and when they were through the native population was either pacified or dead. It was drastic work, but in the end it proved to be the only kind that brought results. Its effectiveness attracted attention to the man who led the Kansas fireaters. His name passed from lip to lip, as the sort of man Americans were proud of. He measured up to the national idea of the soldier. Feat after feat was heralded and it got to be a matter of routine to put the name of Funston in the front rank of the names to be mentioned. After a year of service Colonel Funston became Brigadier General Funston, and when two more years had rolled around, amid popular acclaim the brigadier of volunteers became a brigadier general of the regular establishment, and a medal of honor from Congress graced his breast.

This followed the most brilliant feat of the entire Philippine campaign, the capture by Funston of Aguinaldo, an achievement which speedily brought to an end the stubborn resistance of a section of the native population to American rule. All America rang with the tale of the daring scheme which resulted in the undoing of the arch rebel. If the nation had, long before, developed a suspicion that Funston



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HUGE SKY-SCRAPERS THREATENED BY THE SWIFTLY ADVANCING FLAMES ON APRIL 19TH.



UP BROADWAY TO TELEGRAPH HILL AFTER THE FIRE



was of America's favorite type of soldier that suspicion now became crystalized into certain knowledge, and Funston's welcome home was only second to that accorded to Dewey, the hero of Manila Bay.

A feature of General Funston's conduct throughout the ordeal at San Francisco was his coolness. This was to have been expected of a man who had dug for gold in the Klondyke and faced arctic perils there; had fought Spaniards in Cuba and faced tropical menaces, who had fought his way to the forefront of American soldiers in Phillipine campaigns. But it is not always the expected which happens and Funston's calm, methodical methods in facing the appalling state of affairs which developed as the San Francisco tragedy grew in extent, must be placed to his especial credit. His messages to the War Department were eloquent of his self-possession. In the first of them he announced that he had ordered his troops into the city to fight the fire and to protect what had been left unburned. "I will count on receiving necessary authority" he announced at the close of this memorable message. Here is a sample of his advices to Washington, indicating in every sentence a thorough grasp of the situation and a power to deal in facts in the midst of an atmosphere charged with terror and hysteria:

"Fire is making no progress to the west from Van Ness avenue. West wind of considerable force now beginning. Indications now that all that part of the city south of Van Ness avenue and north of the bay will be destroyed. Some considerable apprehension is felt as to the post at Fort Mason, but it is believed that we can save it. Weather continues fine and warm; practically no suffering from cold. It will be impossible to at once establish proper sani-

tary conditions. Much sickness must necessarily be expected. If the city to the west now standing remains intact there are a good many buildings that can be used as hospitals. The water supply is encouraging. The Spring Valley water people believe they can deliver from ten to twelve million gallons daily. This, with other sources not mentioned, will prevent a water famine."

It was General Funston who appreciated the need of sanitary precautions in the refuge camps and ordered the army engineers to see that these were taken; it was Funston who stripped the army storehouses of food supplies and systematized their distribution to thousands of hungry victims of the disaster; it was Funston who called for tents and prompted the War Department to order every stitch of canvas it owned to San Francisco; it was Funston who inspired the organization of citizens' relief committees, merchants' committees and other factors in meeting the needs of the hour and planning to meet the needs to develop. His far seeing eye missed no detail of present or future. Thus it was that General Greely, his superior, when called back from the wedding of his daughter, could only report, after going over the situation, that the methods devised and adopted under the direction of Funston, would be continued.

#### **TROUBLE MONGERS.**

Trouble mongers, unable to believe that federal and municipal authorities could harmoniously work together, started a canard that there had been a disagreement between General Funston and Mayor Schmitz. The stories only served to bring out testimonials to the great work of the little fighter from Kansas. Funston in denying the fabrications said:

"Mayor Schmitz and myself have been working together in the unity of doing great work, and we are helping to the extent of our ability and apparently to the satisfaction of every friend of the community all unfortunate people of the city."

Then came the declaration of the Mayor. He said:

"Report of conflict between Gen. Funston and myself absolutely without foundation. We are not only without difference, but are co-operating in the utmost friendship and harmony. Gen. Funston's excellent work, his good judgment, and his zeal in our cause by day and by night are appreciated by the people of San Francisco in this hour of great distress. The army and nation are to be congratulated on the possession of such officers as Gen. Funston."

And the more he thought of the outrage that had been done to Funston the more his blood boiled. Just to ease the tension he fired off this supplemental message to Washington:

"Supplementing my telegram of yesterday, I wish again, even in the midst of our great troubles, to express my indignation at the remarkable, malicious, and decidedly untruthful suggestion that a conflict exists between Gen. Funston and myself. I wish to emphasize the pleasantness and harmony of our relations and co-operation."

In brief, no praise that might be bestowed on the Hero of San Francisco could be overgenerous. He will never be forgotten in the City by the Golden Gate.

Frederick Funston was born in Ohio, November 9, 1865. The family moved to Kansas two years later and that state very justly claims the fighter as her son. The future brigadier was educated in high school and university in his home state. In 1890, he became a reporter on

a newspaper in Kansas City and a year later went as a botanist with the United States Death Valley Expedition. This taste of roughing it had much to do with succeeding events in his career. Under a commission from the Department of Agriculture he next explored Alaska and prepared an exhaustive report on its flora. In the winter of 1893-4 he camped in the frozen wastes of the Klondyke. When navigation opened he made a perilous trip down the Yukon, alone in an open canoe. Two years later he was in Cuba, a member of the Cuban insurgent army. He revolutionized the tactics of the brush fighters and taught them what even a limited amount of second rate artillery could accomplish in harassing the Spaniards. He made a reputation for calmness and bravery in the face of all the hardships and dangers of guerilla warfare and was a tower of strength to the Cuban cause in the dark hours of the long fight for freedom which preceded the dawn. After Funston had served eighteen months as an insurgent the Maine was destroyed in the harbor of Havana and then there was a different story. The United States declared war and Funston, despite a serious wound, rushed back to Kansas, and as has been told, was soon commissioned colonel of the Twentieth Kansas Infantry. In the Philippines they dubbed the stubby, red-headed fighter, "Lucky Funston." It turned out that wherever something was afoot, there was Funston and his Twentieth Kansas. The climax came at Calumpit, on the Rio Grande River. Opposite Funston and his Kansans the natives had built a strong line of works commanding the only available bridge. It meant annihilation to try to cross in the face of the fire that could be concentrated on the narrow, flimsy structure. The Kansans had to find another way. Funston

hit upon the plan of rafting a flanking force across the Rio Grande. To get the raft across a tow rope managed from the other side was necessary. Volunteers were called for and two responded, for in the Twentieth Kansas what Funston wanted was law. The sharpshooters were called from the ranks and lined out along the near bank to protect the swimmers who were to undertake the tremendous task of carrying a rope across the swift, wide stream, in the face of the fire from the native breastwork. The sharpshooters went to work with a will and a storm of steel swept every inch of the far bank. It was death for a Filipino to show his head. This kept up until the swimmers had reached the far bank. Then the firing ceased and the Kansans dashed ashore and actually fastened their tow line to one of the heavy bamboo supports for the enemy's covert. The raft was soon under way, Funston among the first score of his men to cross the river. Very soon a half hundred men were available, the native works were stormed and in less time than it takes to tell it the whole position had been taken. The feat made Funston famous and on the strength of it he was promoted, May 2, 1899, to be a brigadier general.

But Funston's greatest service to the cause of law and order in the Phillipines was yet to come. As long as the rebel leader Aguinaldo was at large to inspire native bands to continue an utterly hopeless warfare there could be little accomplished toward final pacification of the islands. Funston set himself the task of capturing the arch rebel. "Funston luck" threw into his hands a messenger from the Aguinaldo camp, who was on the way to secure reinforcements. Funston's fertile brain evolved a daring scheme which meant doom to the participants in case of failure.

This was to have United States soldiers impersonate the expected reinforcements, thus enter the rebel stronghold and seize whomever might be found there. The military authorities assented to the proposition and a volunteer party was organized. The messenger was bought over and led the party to Aguinaldo's hiding place. The long perilous march was made in safety and finally the trick was turned. Aguinaldo, with a number of his lieutenants was captured. This was the turning point in the history of the American control of the islands, and Funston it was who "turned the trick."

Since this exploit the Kansan had gone on tending to the soldier's business. True to his predilection for being "on the spot" the San Francisco tragedy found him commander of the Department of California with headquarters in the stricken city. True to his record he once more "turned the trick" and Mayor Schmitz only expressed the opinion of 450,000 other residents of the city when he said: "The army and nation are to be congratulated on the possession of such officers as General Funston."

#### MAYOR SCHMITZ SHARES LAURELS.

On one other man the blow to the western metropolis fell with especial weight. The manner in which he bore the burden, preserved order, organized relief measures, cheered the citizens, gave the country assurance that the city would be rebuilt better than before and worked night and day to do the thousand and one things that the situation demanded—in a word, the way he made himself equal to a great occasion—attracted favorable comment the country over. This man is Mayor Eugene F. Schmitz. He is a native of the Golden Gate City and, though only a little past

forty was serving his third term as head of its government. One thing that made his position unique was that he was elected without the help of either the regular party organizations, being the candidate of the Union Labor forces. When he was first nominated in 1901, scarcely anybody believed that he had a ghost of a show. Yet he was successful by an overwhelming plurality. Another notable thing about Mayor Schmitz is that he is the son of a German father and an Irish mother, a combination, by the way, that has given the country some of its strongest men. Mr. Schmitz, like his father, is a musician, having been at one time director of the orchestra at the Columbia theatre. He was also president of the Musicians' union of San Francisco. His fairness as an employer and his ability as a speaker made him popular with the labor forces and when they decided to run an independent ticket they turned to him as their leader. It was the teamsters' strike and the brutal manner in which the men were handled by the city authorities that decided the workingmen to go into politics and solidified them so that they have carried San Francisco ever since.

#### AN ACCOMPLISHED VIOLINIST.

Mayor Schmitz is tall and athletic in appearance and of a bearing that would make him a marked man anywhere. He is an accomplished violinist. At the time of the strike of the anthracite miners Mayor Schmitz was instrumental in having a musical entertainment held to raise funds for their support. He directed the orchestra and played a violin solo. The sum of over \$3,000 was raised.

Schmitz's vocation as a violinist caused one very dismal prediction to be made when he was first a candidate.

A lawyer in a speech against the labor candidate referred to the fact that Nero fiddled while Rome burned and added:

"If Schmitz is elected he will be fiddling when San Francisco is in ruins."

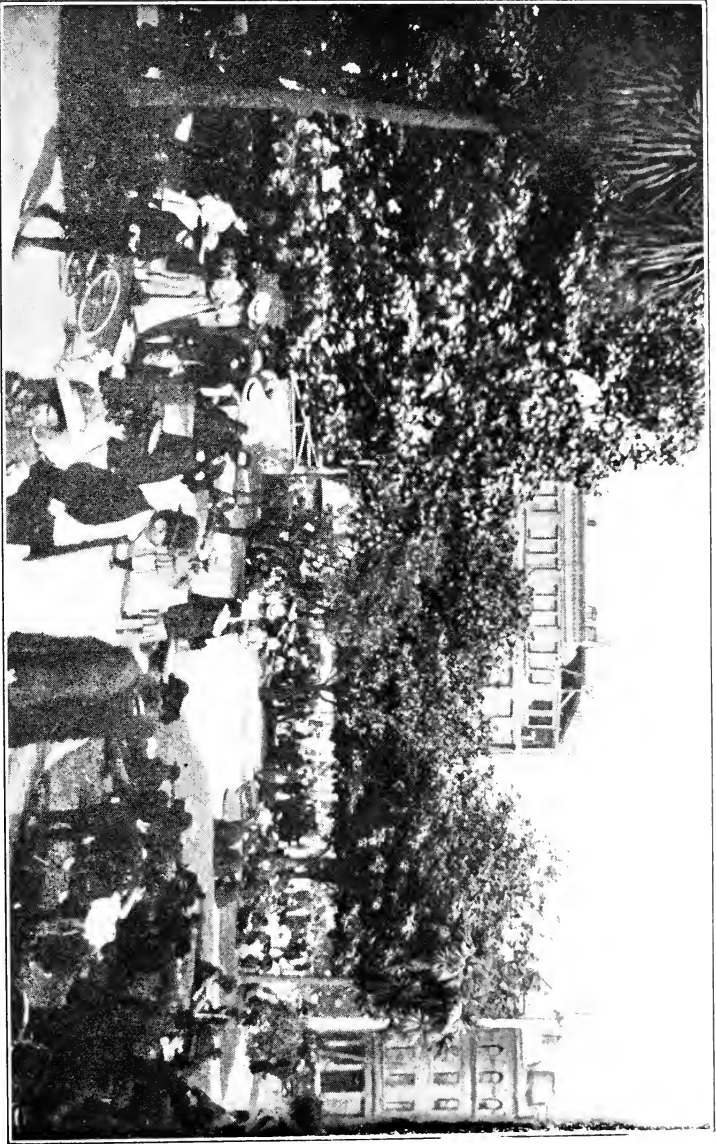
The record of the Mayor belies the prophesy.

The story is told with gusto by San Franciscans that Schmitz's sister-in-law was once a servant. When Gene was elected she gave notice to her mistress that she was going to live with her brother-in-law, the mayor, and invited the scandalized woman to call on her. San Francisco is too democratic a community to mind a little thing like that. Too many of its bonanza kings and high society people came from the proletariat themselves to let such an episode disturb them. They regard it only as a good joke, which indeed it is.

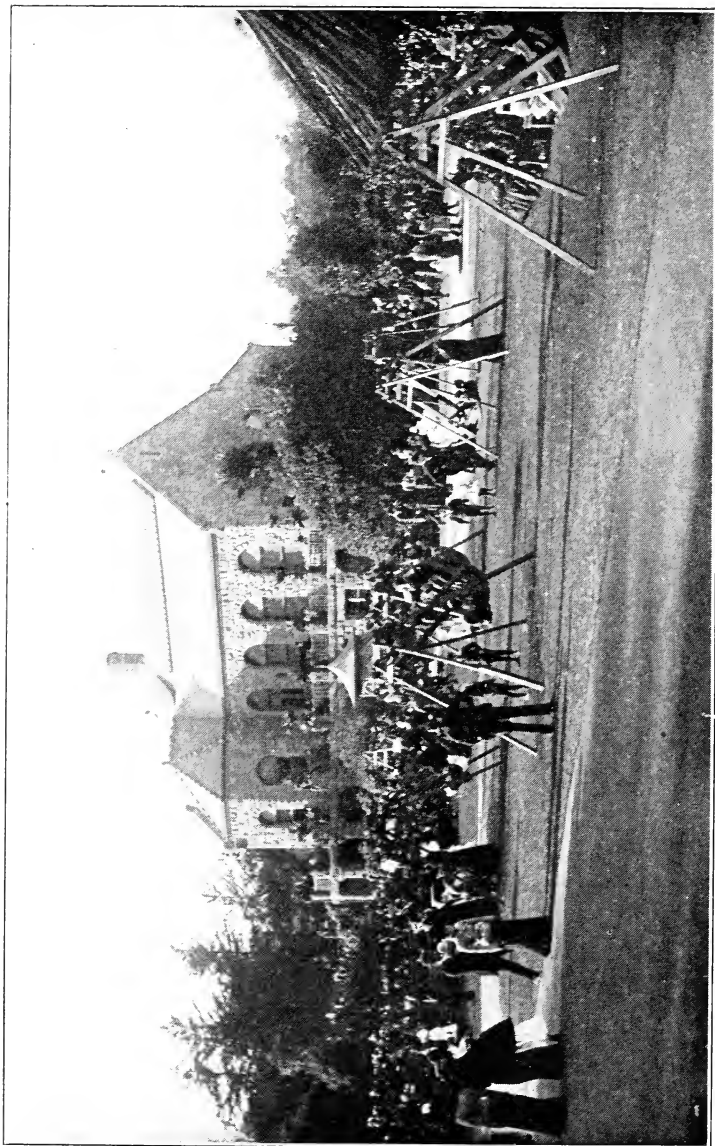
Mayor Schmitz himself is a finely educated man, having studied medicine for two years, but deciding not to enter the practice because of ill health. It was this which caused him to go into training as an athlete. It also decided him to go to the Klondyke, though at a later period, and with this is connected a story that he often tells.

The miners at Dawson got up many vaudeville entertainments with such talent as the place afforded, and Schmitz was asked to play for them. Disguising himself as a tramp, he complied. At first, of course, he could only get discords out of the violin. When he had an audience snickering properly at his amateur performance he reeled off a cadenza that brought the orchestra leader open mouthed up over the footlights and set the audience gasping. He followed this with his own variations on "Il Trovatore," which caused those present figuratively to gasp.





PARK IN SAN FRANCISCO WEDNESDAY MORNING AFTER THE EARTHQUAKE



THE CHILDREN'S PLAY GROUND IN GOLDEN GATE PARK, SAN FRANCISCO

house down. After being encored innumerable times he was offered \$25 a night to play first violin in the orchestra. Afterward the story got out that the supposed tramp was really the director of one of the leading orchestras of San Francisco who was in the Klondike on a vacation.

During this same trip Schmitz also became a steam-boat captain, successfully navigating a boat several trips up and down the Yukon river.

In the crisis at San Francisco Mayor Schmitz proved himself prompt and energetic. His orders to shoot all persons found looting, to confiscate the property of those dealers charging outrageous prices, his drafting of every able-bodied citizen to fight fire and perform other manual labor and the other rigorous measures adopted did much toward preserving quiet and order during this worst calamity that ever befell an American city. His telegrams sent all over the country asking for bedding, tents and food and the efficient manner in which he provided for the distribution of all supplies averted the danger of famine. It took quite as prompt measures to provide against pestilence because of the large number of dead in the ruins and about the streets. Before the fire was out he sent out reassuring proclamations to the citizens, and no sooner was he told that the flames were under control than he was talking of a new and greater San Francisco to arise on the ashes of the old. All this sounds easy, but when one is worn out by three days' incessant labor, with three-fourths of the city, for whose welfare he is responsible, in ruins, it is not as easy as it seems.

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## REBUILDING SAN FRANCISCO.

With the pall of smoke still enshrouding the devastated city, gallant San Franciscans began the work of rehabilitation. Mayor Schmitz, in the midst of the terrors of the conflagration, sent abroad the brave message that a new and greater city would rise speedily to take the place of the old. That prophecy is already on the way to realization. It is a giant task. The city must almost be built from the very foundations upward. Tremendous expense falls upon the national government, the State government, the city government and hundreds of home and foreign business concerns, as well as upon thousands who had owned homes. Congress has provided for federal structures worthy of the city; a special session of the legislature has given freely of the funds of the States to supply housing for its agencies of government and has empowered the city to secure the million necessary in replacing and repairing the scores of schools and other public structures which were reduced to ashes. The task is a gigantic one. It may take ten years, it may take twenty years. But San Francisco has gone bravely to work and it can be taken for granted that the time consumed will be the minimum time in which it is possible to undo the joint work of earthquake and conflagration.

The natural advantages of San Francisco, including a matchless harbor, it was said, made it, and would make it for all time the metropolis of the West. The fact that the depth of the water only on the San Francisco side of the bay was ample for large vessels would prevent commerce of the port leaving the city. The necessities of commerce and traffic compel the rebuilding of the city.

**THE CROCKER LOSSES.**

W. H. Crocker, of San Francisco, who, with his elder brother, George, directs most of the Crocker estate, placed the total losses of the family through fire and earthquake at \$7,500,000. The insurance is merely nominal, he said, and will not begin to cover the loss.

"Mark my words," he said, "San Francisco will arise from these ashes a greater and more beautiful city than ever. I don't take any stock in the belief of some people that investors and residents will be panicky and afraid to build up again. This calamity, terrible as it is, will mean nothing less than a new and grander San Francisco.

"It is preposterous to suggest the abandonment of the city. It is the natural metropolis of the Pacific Coast. God made it so. D. O. Mills, the Spreckels family, everybody I know, have determined to rebuild and to invest more than ever before. Burnham, the great Chicago architect, has been at work for a year or more on plans to beautify San Francisco. Terrible as this destruction has been, it serves to clear the way for the carrying out of these plans. Why, even now we are figuring on rebuilding.

"More than that, I am confident that, except for what fire has absolutely laid waste, it will be found that the buildings are less injured than was supposed. Plastering, ornamental work, glass and more or less loose material has been shaken down, but the framework, I am sure, will be found intact in many big buildings."

**TO GO UP LIKE BALTIMORE.**

D. O. Mills was equally emphatic about the rebuilding of the stricken city. He said:

"We will go ahead and build the city and build it so that earthquakes will not shake it down and so fire will not destroy it, and we will have a water system which will enable us to draw water from the sea for fire extinguishing service and other municipal purposes. We will thus have less to fear from the destruction of the land mains.

"The whole point with all of us who own property down there is that we have to build. To let it lie idle, piled with its ruins, would mean the throwing away of money, and I am sure none of us intend to do that. The city will go up like Baltimore did, and Galveston, and Charleston, and Chicago, and there will be no lack of capital. California spirit and California enterprise, which are always associated with the State of California, will rise superior to this calamity."

In the rebuilding of San Francisco it is probable that an effort will be made to lay out the new city on different lines, so that the new structures for the business district may be provided with good foundations, such as could not be obtained within the area of the made ground formerly occupied by the business section.

D. Ogden Mills, Colonel Dudley Evans, President of Wells, Fargo & Co.; Archer M. Huntington, Isaac Guggenheim, who lost heavily in the destruction of San Francisco, all expressed their conviction that the city would recuperate from this disaster and rise from the ruins more beautiful and more prosperous than ever.

If the ideas of Colonel Evans, an old-time Californian, in the matter of building the city come to pass, the interesting fact will obtain that the disaster has shaken the places of the rich into the places of the poor, and vice versa. Col-Evans says that in building the new city the business section

should be laid out south of Market street, where the poor have lived. There is a better foundation to be had there.

"You may say for me, that San Francisco will rise Phoenix-like from the ashes of her ruins. The present generation is imbued with the spirit of courage exhibited by their forefathers in their sturdy fight during the pioneer days of '49.

"In my opinion, San Francisco in a few years will be a greater and grander city than it ever was before. I do hope, however, that there will be some method arranged to keep the merchants from building on that dangerous spot of made ground.

"There the damage is always greatest, because, there is no foundation, practically, for the immense buildings erected there necessary for the wholesale purposes. It is quite probable, though, that with the knowledge of the danger to be incurred by building there, the merchants will shun that portion of town and reconstruct on solid ground formerly known as Tar Flat, south of Market street, where the poorer classes have heretofore lived."

"All talk of abandoning the city for some such place as Seattle is foolish," said Archer M. Huntington, whose San Francisco residence containing many valuable paintings was destroyed. "San Francisco is the logical metropolis west of the Rockies. The city will be rebuilt at once, and it will be an improved city."

As to rebuilding our own residence there no plans have been formulated. Nothing will be done in that direction for some time at all events.

#### SHOWS FAITH IN CITY.

Isaac Guggenheim of M. Guggenheim's Sons showed



that his confidence of a new San Francisco is of a practical sort when he announced that orders had been issued to proceed as soon as possible with the construction of a new smelting plant planned recently for the city.

"We have every confidence in the city's recuperative power," he said. "Our losses have been fairly large, but so trifling in the face of the larger losses that I decline to discuss them."

Engineers and contractors are already sending representatives to the ruined city, where the results architecturally will be studied. The reports of these experts will have a great deal to do with the constructing business of the future. The George H. Fuller Company and the Thompson-Starrett Company have already started their men.

Theodore Starrett, President of the Thompson-Starrett Company, called attention to the fact that the San Francisco Chronicle Building passed safely through the earthquake, although it was subsequently destroyed by fire. Mr. Starrett nearly twenty years ago, when the Chronicle Building was put up, was the engineer for the firm of architects in charge of the job.

"When that building was put up," said Mr. Starrett, "the earthquake of 1873 was still fairly fresh in the minds of San Franciscans, and while the structure was not of the modern steel skeleton type, it contained one structural feature which, I am confident, saved it so far as the jarring of the earth was concerned.

"At every floor level and in some instances between floor levels there were imbedded in the outer walls courses of rails and I beams, extending entirely around the building and giving it greatly increased stability.

"The steel frame of The Call Building stood up in

good shape and The Chronicle Building was all right until the fire reached it, so that, so far as an earthquake is concerned, a union of these two types of buildings—that is, a steel frame with reinforced walls—should afford effective resistance.”

Architect Francis H. Kimball, said:

“It seems to me that the foundations of many of our buildings carried down by caissons to bedrock, would afford considerably greater security against any disturbances of the earth than could be had in structures supported by one means or another on a comparatively soft bottom.

“The modern steel skyscraper is no such fragile creature as most people imagine. Properly built, it is practically a unit, or a series of units bound together.”

#### A QUESTION TO BE DECIDED.

There is one point in connection with the San Francisco disaster, to be brought out in the later investigation of its results, that will be of interest to architects and builders. That is whether the steel frame buildings which have withstood the shock have not been thrown out of plumb.

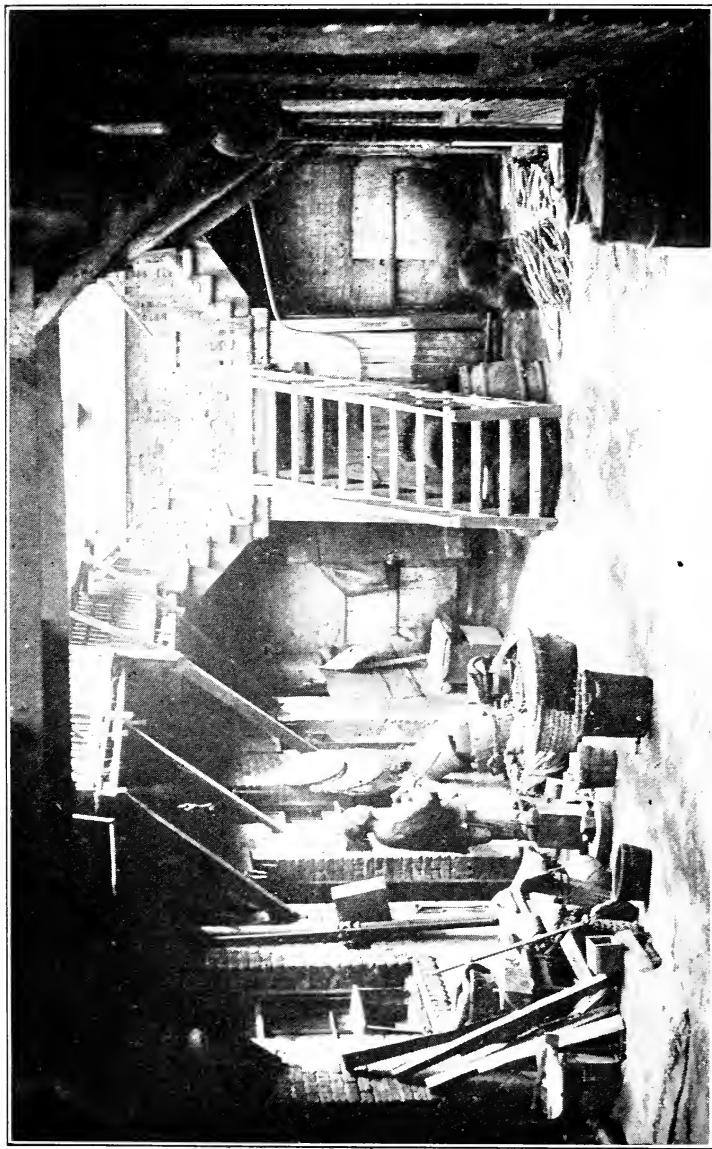
#### THE PEOPLE HOPEFUL.

That the spirit of the city is not broken is shown by the talk of prominent men.

Ex-Mayor James D. Phelan, addressing a meeting of the General Relief Committee, suggested that the press make known to all people that the work of rebuilding will begin as soon as possible and that all skilled labor and trades should be prepared to remain in or near the city, as there would be plenty of employment immediately.



DUPONT STREET, THE MAIN STREET OF CHINATOWN, SAN FRANCISCO,  
AT NIGHT



A RAG PICKERS' ALLEY IN CHINATOWN, SAN FRANCISCO

"California can take care of all the homeless," said Mr. Phelan, "and it is hoped and urgently desired that unskilled laborers do not go to far-off Eastern cities, as they will soon be employed in San Francisco."

He said later: "The city will be rebuilt on lines of strength and beauty heretofore unknown."

Rudolph Spreckels said: "Of course the city will be rebuilt and better than ever."

Homer S. King, President of the San Francisco Clearing House, said:

"San Francisco has a future, and will rebuild. There is not even a panic and I have seen more than one panic. It is only a setback from which the city is strong and vigorous enough to recover. I do not believe any of the bankers consider this disaster anything more than a serious wound that will heal quickly and cleanly.

"The banks are more than willing to help the people who have shared in the common distress. Chicago and Baltimore in time recovered from even greater setbacks. The people of San Francisco have always been progressive, and are recognized as hard workers. There is no reason why they should not do the same.

"The bankers will help to rebuild the city. We are absolutely satisfied and assured as to our own standing. Most of the money that is put into circulation will go where it will be most effective in the re-establishment of business."

With the fire almost out, authorities and large property holders were able to go into the devastated district and get some idea of the extent of the ruin. It was found in many instances that the losses were not so great as supposed.

**THREE ELEMENTS OF PROFIT.**

In three things the destruction of San Francisco wrought good to the San Francisco of posterity:

It removed forever from the center of the city the greatest pest hole of any modern city—Chinatown.

It taught the people of San Francisco how to build for security against earthquakes.

It made possible the rectifying of the serious blunders of the builders of the city, who had blotched the finest topographical site for a city beautiful in America.

It can be taken for granted that Chinatown, which lay on the slope of Nob Hill between the best business and finest residential sections, will never be rebuilt in the center of the city. San Franciscans in New York, in the midst of their profound grief at the destruction of the city, paused to congratulate each other frequently that Chinatown would never more blot the side of Nob Hill.

For years the public spirited men of San Francisco have planned to have Chinatown removed to the outskirts of the city. Men and women have almost prayed that one of the frequent fires in the cramped quarters of the little Canton would wipe it out, but the close proximity of two engine houses has always been its safeguard up until now. One idea of the progressive San Franciscans was to move the Chinese out of the town altogether and make them set up a town of their own. Since they would gamble and plunge into immoralities they should do it in a city by themselves, where the whites would not be contaminated.

A big portion of the better class population of San Francisco had of necessity to go through this Chinatown to and from their places of business. It crowded the very business centre itself. Within one block of the Hall of Jus-

tice were some of its worst dens. From 25,000 to 30,000 Chinese, mostly of the worst class, thronged its narrow streets at night and shot each other in the theatres or split open the heads of enemies in dark halls. The protection fund, raised by the gambling trust, was large enough to buy many of the police officials. Only a little over a year ago Chief of Police Wittman and Sergeant Ellis were removed from office because of a scandal resulting in the latter's admission that he had been receiving protection money from the head of the gambling trust.

#### CHINESE WOMEN SLAVES.

Within this congested pesthole hundreds of Chinese women were kept slaves. Walking through narrow alleys the visitor would see their faces behind iron barred windows hardly large enough to let in the necessary air. There was a society formed for the rescue of Chinese girls brought over from China for immoral purposes under the guise of "wives of Chinese merchants." This society actually encountered difficulties from the white officials in carrying on its work, so powerful was the corruption fund. There is no people on earth so given to the giving and taking of bribes as the Chinese.

Right in the heart of Chinatown was one of the most openly conducted and the largest immoral house perhaps in the world. What was once a hotel on Jackson street was turned over to immoral purposes and from 150 to 200 women had "cribs" there. So openly was it conducted that the newspapers referred to it as the "municipal crib." A half dozen other smaller places, but equally notorious, were on the edges of Chinatown.

## NO MORE OF CHINATOWN.

With San Francisco's Chinatown, the largest Chinese settlement outside of China, destroyed—it occupied ten square blocks in the city's heart—a new Chinese city will be built on the Pacific coast. A site will be purchased by a syndicate of Hongkong merchants, who already have the scheme well under way.

While many Chinamen were among those who perished, 20,000 managed to get across the bay to Oakland, where some found accommodations in Oakland's Chinese quarter. The majority of the rich merchants of San Francisco's Chinatown were importing agents for large syndicates in China, and it was on these syndicates that much of the loss falls. However, many of San Francisco's Chinese importers lost every dollar they possessed, for some of them carried stocks of gold and silver jewelry of great value.

The firm of Sing Fat & Co., at 614 Dupont street, was probably the largest firm of its kind in the world, and carried a stock valued at a million and a half dollars. They were in the heart of Chinatown in San Francisco, and were completely burned out.

The firm of Wing Chong Wo, flour merchants, were at 716 Sacramento street. They were the owners of big flour mills at Seattle, Portland, and Oakland, but their headquarters were in San Francisco. As they were right in the line of the fire they probably lost half a million dollars.

Sun Kam Wah, the Chinese millionaire of San Francisco, was at 716 Dupont street, and his losses will foot up half a million. In fact, most all the importers and exporters along Dupont, Commercial, Clay, Washington,



Jackson, Pacific, and Stockton streets, Waverly Place, and Washington alley have suffered losses that will amount to more than \$10,000 each, and in many instances to \$100,000.

Many of the Chinamen in San Francisco owned real estate in Chinatown, but some of them were backed by Hongkong syndicates, who will start them again in new buildings as soon as the work of erecting the new city gets under way.

Chinatown in San Francisco was bounded by California and Pacific streets, and Kearny and Stockton streets.

About 21,000 Chinamen lived there, many of whom had gone West only recently to work in the salmon fisheries. The normal population of Chinatown, was about 17,000, but with the advent of Spring many Chinamen from other parts of the country had arrived, intending to remain for a few weeks. In fact, there were more Chinamen in San Francisco on the day of the disaster than had ever assembled there before. Not only was the Chinese quarter filled to overflowing, but in addition to the 3,000 employed as cooks and in laundries and in the twenty-four branches of the building trades, there were 4,000 others from the East who had gotten employment in the factories last month.

According to Le Compte, the Western Union Telegraph operator who was the last to remain on duty, even after the city was in flames, many of the Chinamen gathered up their belongings and went up to the Golden Gate Park, where they camped out, but about 300 remained on guard in their shops until the roofs of the buildings caught fire.

Only a few of those who remained behind are believed to have escaped death, as they sat behind barred windows

guarding their poultry and smoked fish until they themselves were smoked to death. Of course, they were Chinamen of the lower class.

The bankers and traders were among the first to flee, and they are now safely housed with friends in Oakland. Some of them will make their homes in Oakland in the future, but the majority will go to the new Chinese city as soon as it is completed, because they will be able to transact their business as well in the new settlement as anywhere else, for the reason that much of their business consists of trade with China.

#### CHINESE WIVES TO GO EAST.

Several thousand of the burned-out Chinamen will probably go East and settle in New York. If they do this they will undoubtedly take their Chinese wives, so that, instead of having half a dozen Chinese women, New Yorkers will see four or five hundred. The Chinese women of San Francisco dressed very gaudily, with loose-fitting blouses of generous dimensions. They painted their faces so that the paint was easily discernible.

#### TO BE A CITY BEAUTIFUL.

It is only of very recent years that there has been any concerted movement among the citizens of San Francisco to make of the city a city beautiful. There was formed about two years ago an organization of business and professional men, including landscape artists and architects, which had planned, roughly, some improvements that would have greatly enhanced the beauty of the city.

But right at the start this committee realized that concerted effort could never make the city what nature had

seemingly intended it to be from the standpoint of beauty. Laid out in a hurry, as it were, and planned by men not realizing, nor perhaps caring, that its hills were more numerous and more beautiful than the hills of Rome, there could not have been a greater blotch to landscape than the running of streets straight up and down such hills as Nob, Russian and Rincon. That the early builders would undoubtedly have marred Telegraph Hill in the same way is certain but for the fact that it happened to be too steep even for cable cars to climb almost perpendicularly.

There are a dozen of these steep hills in San Francisco which overlook the bay, and afford a view of the whole country roundabout. Monte Diablo, with its occasionally snow capped head rising within twenty miles of San Francisco, which hasn't experienced snow in twenty years, seems to be but across the bay from these hills. The San Franciscan wearing spring clothes without an overcoat, is often treated to the sight of snow on Monte Diablo.

Then the hills behind Oakland and Berkeley, and the hills of Marin County and Mount Tamalpais to the north lie within the easy range of vision of the hill dweller of San Francisco. Standing on the great veranda of the Fairmount Hotel at just this time of the year there lies before you a scene unequalled in its kind by any in the world except the view of the Bay of Naples from the City of Naples. The panorama of the bay and the hills beyond, with Monte Diablo in the background, never tires, for the reason that within a half hour the hue of the bay and the hills may change a half dozen times. On the green hills, especially, is there a constant change of nature's delicate colors. First she is blending blue and purple and then purple, green and blue.

It was on these hills that the planners of San Fran-

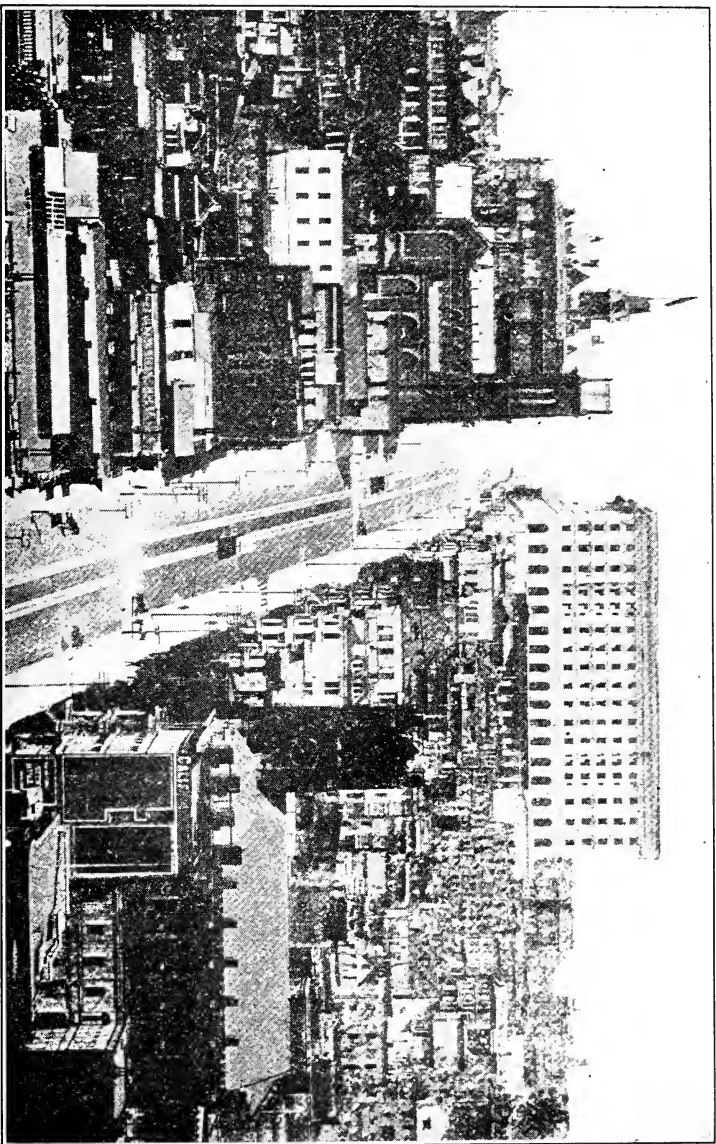
cisco beautifully dreamed of great, winding terraces and marble palaces that should surpass anything in the world, but they had but little hope of ever realizing their dream because the hills for the most part had already been marred by the almost perpendicular streets.

Will this be changed now? It will be if it is found practicable, and if the sense of beauty, which is strong in California, triumphs over the spirit that made of Rincon Hill, for instance, a district of cheap residences.

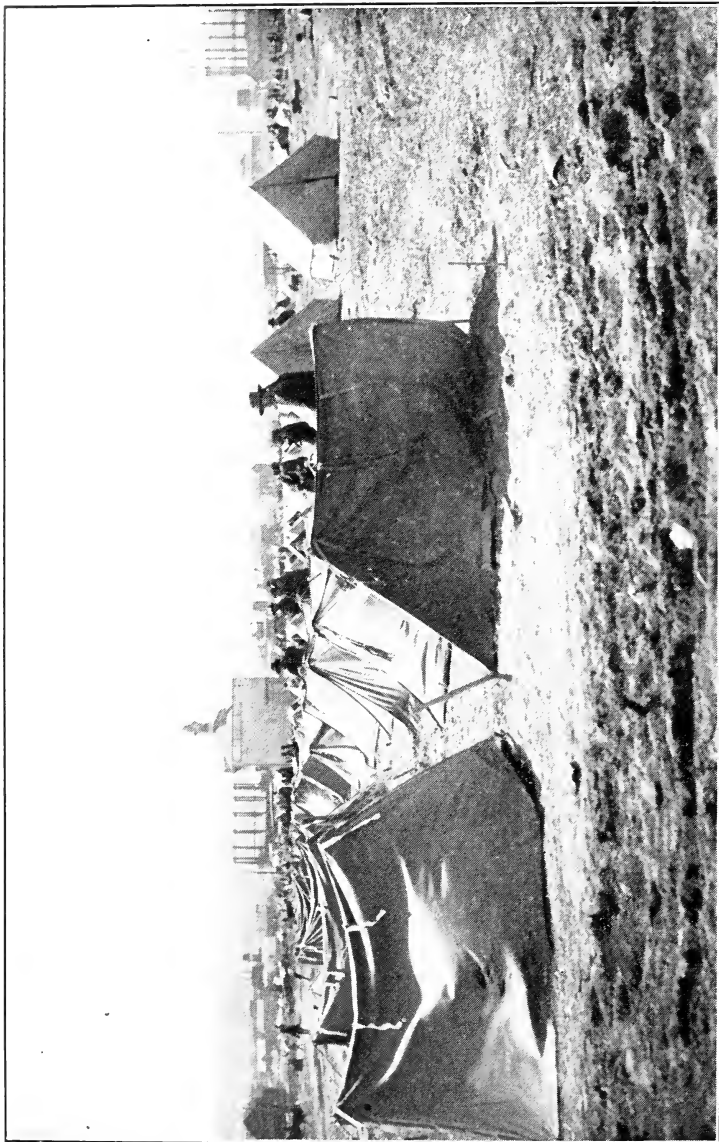
As to the rebuilding of San Francisco, it is certain that the city will enforce restrictions, based on the terrible experience which the city has just gone through. It is the opinion of architects and builders that all business houses, no matter of what height, will be of steel cage construction, with the walls anchored to the steel frame-work. The earthquake demonstrated that such buildings will withstand anything except such a convulsion of the earth as would topple them over from their own sheer weight.

The earthquake has perhaps destroyed one ~~and~~ hope of the San Franciscans. Several years ago a movement was put on foot to commemorate in one of the greatest expositions the world has ever seen, the four hundredth anniversary of the discovery of the Pacific Ocean by Balboa. This exposition was to have been held in 1913, and committees had already been appointed to begin the preliminary work.

Scores of municipalities have been devastated by fire and flood or have been shaken by convulsions beneath or cyclones overhead, yet hardly has the shock passed than the citizens are at work among the ruins, building better than they knew before how to build. Boston, Chicago and Baltimore, swept by destructive fires, regained power and within a few months were conducting their affairs as



VIEW IN SAN FRANCISCO, LOOKING UP CALIFORNIA STREET



THE NEW CHINATOWN AT FORT MASON

though even the memory of disaster had passed from them.

Those who believe in San Francisco say the spirit of Forty-nine will assert itself, that confidence will be restored and that soon a new city, buttressed against the elements, a city of steel and anchored masonry, will defy fate and establish itself more firmly on the site where now are broken columns and shapeless piles. The period of recovery is surprisingly quick in American cities. Rebuilding begins within a few days, and in two or three years scarcely any trace of the disaster remains.

#### DISASTER OF CONTINENT.

Beyond all question, the double ruin which fell upon San Francisco represents the worst catastrophe which has ever befallen a municipality in the United States. It greatly exceeds the Chicago fire of 1871, for when the Queen City of the West was laid low she had only a population of 334,000, as compared with the 450,000 inhabitants who dwelt within the limits of San Francisco. The area burned in Chicago was about four square miles, while the district devastated by earthquake and by flames in San Francisco is approximately seven and one-half square miles. The death roll of Chicago bore 275 names, while there is every reason to believe that twice as many persons lost their lives in San Francisco, taking conservative estimates of army and navy officers as a basis.

Twelve thousand buildings were destroyed in Chicago, and certainly more than that were reduced to ashes and to broken beams by the double disaster which spread havoc through the city by the Golden Gate. The monetary loss sustained by Chicago, using careful estimates made by the National Board of Underwriters, was \$160,000,000, while

that suffered by San Francisco is \$250,000,000. In Chicago the homes of ninety-eight thousand persons were destroyed, and in San Francisco, three hundred thousand lost their homes. The disaster which has befallen San Francisco easily exceeds the one which devastated Chicago, which had been considered the worst which had ever befallen any American city.

Boston's fire in 1872 swept over sixty-five acres of the business part of the city and entailed a loss of \$70,000,000. The Baltimore fire of 1904 destroyed 2,500 buildings, situated in eighty blocks, representing 150 acres of territory. The loss has been estimated at from \$50,000,000 to \$70,000,000. The amount of insurance actually paid as the result of the conflagration was \$29,000,000.

In comparing the catastrophe in San Francisco with others it must be borne in mind that the Western city has of recent years not been considered heavily insured, as comparatively small losses by fire caused many merchants to make comparatively slight provision for the work of flames. Many of the structures were hardly considered insurable on account of their light and inflammable material and their great age.

In all the payments of claims the question whether the loss was caused by the earthquake or the fire must be considered and many of the policies will undoubtedly be cancelled on account of the earthquake clause.

This would not give the owners of buildings and of stores as large an amount of insurance proportionately as was received by those who suffered on account of the fires in Chicago, Boston and Baltimore.

Yet for all that, those who know the disposition and the temperament of the men of San Francisco say the citizens will rise superior to all obstacles. Energetic and self



reliant are all San Franciscans; they have in their make-up a buoyancy of spirit and a scorn of difficulties which come from the olden days of the coast and the Spanish occupation.

San Francisco has had earthquakes before and has experienced fires which have swept away considerable areas. The first shock over, those who believe in the destiny of the place maintain that the same energy will come into play which caused Chicago in a year to regain strength and to go forth on a career which has justified the most sanguine hopes of her citizens.

#### CHICAGO'S QUICK RECOVERY.

Chicago was as near nothing as it was possible for the city to be after the fire which began on October 7, 1871, had burned itself out. The business district was a black void and what had been hives of industry were blackened ruins. Merchant princes were reduced to beggary and establishments which had done thousands of dollars' worth of business in a day were nowhere to be seen. Stones and bricks had not begun to cool before Chicago began to recoup her losses and to prepare for building anew.

The "Burnt Outers" walked about streets which scorched the soles of their shoes. One of them was seen fishing a brick out of a heap of masonry with the aid of heavy folds of paper as a protector.

"Just trying to see," he replied to an inquiry, "when these things will be cool enough to be laid down again."

The firm of Field and Leiter, composed of men since known as merchant princes, saved its books from the fire and set up a temporary office in a side street where a placard was displayed saying they would be glad to hear from

any persons who might owe them anything, as they felt that they needed the money.

Chicago remained by the lake and day by day cleared the ruin choked sites and laid the foundations of a new city and a new career. Merchants who had been directing great stores took to sidewalk stands, which they ornamented with the legend that although they had lost everything they were still doing business at the old prices, and exhibited meagre wares which they had received on long credit.

"Derrick days" in Chicago represented a period of quick rehabilitation which before that had never been seen. The idea of men remaining on a fire swept prairie among the smouldering piles of the city which was commanded the help and sympathy of the country and of the whole world.

#### **\$40,000,000 FOR REBUILDING.**

What with \$36,000,000 received from insurance companies and \$40,000,000 of contributions the city had not much capital with which to begin life anew. Capital, however, advanced money, and Boston especially was active in furnishing to the Queen of the West the means by which she began her fight with fate. Millions of dollars poured in from the American Athens. New York lent substantial aid and her leading merchants volunteered to give all the credit which was desired. Such messages as, "Suppose you are burned out; order from us what goods you wish; pay for them when you can," were wired to many merchants of Chicago, and as a result business was on its feet again in less than a year and before two years Chicago was well on her way to the realization of her ambitions.

One of her citizens, standing amid the city's ruins,

said that by the year 1900 Chicago would have more than a million inhabitants, and his prophecy, as all the world knows, was more than realized. Chicago was the scene of a world's fair a little more than two decades after the "burntouters" walked among the smouldering embers waiting for the time of rebuilding.

Boston, which had been the benefactress of Chicago, was swept by fire in 1872, and yet within a year she was blithely celebrating the centennial of the throwing overboard of British tea in the harbor. Within five years all traces of the conflagration were obliterated from her streets as thoroughly as was the clog which disaster brought removed from the spirit of her citizens.

#### BALTIMORE MORE BEAUTIFUL.

Baltimore began deliberately to rebuild after much of the business centre had been destroyed. Two years have passed since those fateful days and a more beautiful city has arisen from the ashes. The fire was not thoroughly put out, for in an excavation remnants of the blaze were found only a few weeks ago. The merchants, after the district in which they had been housed went up in smoke, hired old warehouses and temporary buildings and re-established themselves within a few days.

The municipal authorities thought that it was just as well, considering that the city was to be largely rebuilt, to do away with the narrow and often unsightly thoroughfares of the lower districts. Their decision to have wide streets and a better scheme of arrangement naturally caused a clash, and it was six months before the preliminaries were arranged. The city of Calvert took its time about building and erected structures which have made it

one of the most pleasing municipalities in appearance on the North American continent.

Business, however, did not perceptibly fail off in Baltimore, such were the energy and masterful self control of her citizens. The real estate valuation of Baltimore for assessment purposes before the fire in 1903 was \$385,000,000, and in 1904 the returns were a million in excess, while the valuation of city real estate in 1905 in the Monument City was \$406,000,000, showing that the development of Baltimore was little retarded.

How a city may rise superior to the worst attack of the elements is shown by the history of Galveston, Texas, swept by a tidal wave and a hurricane in 1900, and yet four years later celebrating amid restored prosperity and the building of new defences against the encroachments of the sea. The city of Charleston, S. C., shaken by earthquake, returned to its usual occupations and prospered as though nothing had happened. In many a thriving American city to-day the visitor is taken to the top of some high structure so he may observe the line of the last cyclone, marked by a building erected to take the place of those which went down or by the more recent masonry which is fitted in to replace parts of houses which were damaged by the passage of the storm.

"As far as any one being afraid to live there is concerned," said Mr. Snow, "I do not think that is true. Men will live on the edge of the crater of Vesuvius, and, as a matter of fact they do. The country cannot do without San Francisco. The harbor is one of the best in the world and it is essential to the trade of the country. San Francisco is an entrepot for the Orient and from it are shipped many millions of dollars' worth of the products of the United States. Its shipping is enormous. It sends abroad the

grain from the rich Sacramento Valley by ship and through it the railroads send fruit to the East. It is the clearing house for the fertile state of California.

“San Francisco was there because it was needed and it cannot be swept away. Perhaps it will have two or three years of a struggle. Seattle may get some of the trade, but for all that it is bound to triumph over adversity. I have been in San Francisco often and I know the forceful, energetic and yet apparently care free citizens of that place.”

#### CITIES HARD TO DESTROY.

Destruction of a great city might, in a financial way, mean one or both of two things—entanglement of general credit, or a heavy drain on capital. If New York were deeply involved with merchants and bankers of a ruined city, if obligations had to be met here without any prospect of collecting obligations due from there—the possibilities might be awkward. But that is not the situation. Even in the Chicago fire of 1871, this turned out to be the lesser evil.

When, however, outright destruction of property involves enormous and immediate demands on capital to restore it, another question arises. To take merely round numbers: If \$100,000,000 worth of business houses, pavements, gas and water mains, public buildings, manufacturing plants, and transportation appliances have been destroyed in forty-eight hours, and if the necessities of the case require replacement of all this property in the shortest possible period, the situation as regards the country's supply of available capital must be affected. Money can be borrowed for the purpose, but when borrowed, it must be taken from quarters where it is already invested. In so

far as insurance companies pay for the loss, the general result is the same. The companies must withdraw from other investments the capital awarded to owners of the ruined buildings. The question of practical financial interest is, how heavily this new load will weigh upon the markets.

#### RESULT OF CHICAGO FIRE.

The famous modern instance was the Chicago fire of October, 1871. Total property loss at that time ran beyond \$200,000,000. Losses incurred by 341 insurance companies, as a result of the catastrophe, footed up \$88,634,122. It should be borne in mind that \$200,000,000 meant a good deal more to American finance thirty-five years ago than it means to-day. It is also interesting to remember that the Chicago fire occurred at the height of a business "boom," with trade extremely active, and real estate speculation rather wild in all sections of the country. Bank loans were heavily increased over the year before, without any increase in cash holdings, and a fortnight before the great fire of October 8, surplus reserves of New York banks were down to \$1,167,000.

Here are some interesting resemblances to our present situation. What followed? Heavy Stock Exchange liquidation, here and at London, came as a matter of course; there were such declines, within a week, as nine points in New York Central shares, eight in Union Pacific and Burlington and Quincy, seventeen in Lake Shore, twelve in Pacific Mail. So far as concerned the Stock Exchange, this flurry of alarm spent itself before the month was over. Despite the large drain of currency to Chicago, the New York bank position grew stronger. Naturally, railways converging on Chicago had to report decreasing

earnings; the St. Paul's for instance, fell in October from the \$908,000 of 1870 to \$841,000, and in November from \$791,000 to \$644,000; yet stocks even of these companies recovered most of October's loss. What was most noteworthy of all, was the fact that despite the catastrophe at Chicago in October, the ensuing year was a period of enthusiastic speculation for the rise in everything, and of immensely increased engagements of capital.

#### CAPITAL CAN BEAR HEAVY STRAIN.

How is this to be explained? Was the Chicago disaster really a negligible fact in finance, except for a single week of Stock Exchange disturbances? This would be a rather sweeping conclusion; but, on the other hand, the episode of the seventies leaves no doubt that the influence of such an event may be much overestimated. Prodigious waste of capital did occur in 1871, as it has occurred this month, and it had to be replaced. Yet after all, the loss at Chicago was but a fraction of the capital flung away unproductively in the Franco-Prussian War, and the San Francisco loss bears a similarly small proportion to the billion dollars or thereabouts sunk in the fight between Russia and Japan. All that this proves is that capital is more elastic than is sometimes thought, and that it can bear pretty heavy strains so long as credit stands. There are economists, as well as practical financiers, who ascribe the panic of 1873 to the country's losses in the Chicago fire of 1871 and the Boston fire of 1872, but the direct connection is not easy to prove. In Europe, that panic has been similarly ascribed to the losses of the Franco-Prussian war of 1870. What somewhat damages that theory is the fact that France, the defeated belligerent, was about

the only European nation whose markets did not fall into panic, three years later.

#### CITY STRONG FINANCIALLY.

The one comforting feature of the San Francisco disaster is found in the financial conditions of the stricken city. The prompt action of the Government, which on Thursday, the day after the great earthquake, authorized the immediate transfer of \$10,000,000 from New York to San Francisco, started a steady flow of money toward the metropolis of the Golden Gate. On that day \$3,500,000 was sent by the National Park Bank of New York City through the Sub-Treasury. According to the reports made to the Comptroller of the Currency on January 29th last the total of money belonging to San Francisco deposited in various institutions in other points was not large; there was due the San Francisco banks from other national Banks \$3,097,293; from state banks and bankers \$3,988,-230; from reserve agents, \$5,873,468, making a total of \$12,959,991.

In regard to the first two items, which aggregate over \$7,000,000, a large proportion would be held in and around San Francisco, and the balance would be scattered in various parts of the United States. The bulk of the last item, nearly \$6,000,000 was on deposit in New York City and Chicago.

#### BANKS WELL SUPPLIED WITH MONEY.

At the end of January there were ten National banks in the city with aggregate assets of \$98,191,060. After the earthquake and before the flames had reached the banking district the doors of the various banks were called upon



by depositors eager to secure their money. It became necessary to close the doors of many banks and call on the troops for assistance. Military guards were placed at the bank entrance to keep the crowds in check and preserve order.

The United States Mint, in which was stored \$39,000,000 in gold and silver coin and bullion, was the only building left standing of the financial institutions of the city. Heroic work by Supt. Leach and his assistants saved the building from destruction. It withstood the earthquake shock and the later fire. The total coinage at this institution for the fiscal year ended June 30, last was \$76,815,538, of which \$64,313,500 was gold, and \$12,502,038 silver. The total coinage for the same year of all the mints of the United States was \$91,172,720, of which \$29,983,691 was gold. From these figures it will be seen that the San Francisco Mint is the most important in the country, so far as the coinage of gold is concerned.

The State Board of Bank Commissioners opened temporary quarters in Oakland just across the bay and took necessary steps to relieve stringency, in which task they were aided by the government.

The banks showed the utmost pluck and no doubt that San Francisco will arise more beautiful from her ashes is heard from the financiers of the Golden Gate City.

San Francisco's population at the time of the conflagration was 450,000. The city receives from taxation a total of \$6,103,849. The taxes levied for state purposes were \$2,569,489, giving the city a taxable earning power of \$8,673,338 per annum.

#### PEOPLE WILL SOON RETURN.

Though because of the destruction of the business and

of a large part of the residential section of the city, thousands of the inhabitants are taking refuge in more or less remote localities, this exodus is likely to be only temporary and when the city shall be rebuilt the refugees will probably return and renew their occupations. It is inconceivable that no matter how great the inducements offered migration of San Franciscans to perhaps more attractive neighborhoods, there will be any permanent abandonment by them of the city in which they have had their support and where very many have accumulated their wealth. There is no other municipality on the Coast having a location so advantageous for the conduct of commercial and industrial enterprises; none with so spacious and easily protected a harbor and none combining trans-continental and ocean transportation facilities as this Golden Gate—the nation's pathway to the Far East. There has been built, from the beginning of its career as a business centre, such a secure basis for the development of all productive activities that not even the most energetic rivalry of other newer and possibly, in some respects, quite as advantageous location will supplant this city of Seven Hills as the metropolis of the West.

The interests, capitalistic and otherwise, which have so long been identified with San Francisco, have no thought of the abandonment of the city because of its exposure to seismic disturbances. The disaster has taught a lesson, which will never be forgotten, of the danger of permitting the construction of buildings that, in case of conflagration, but add fuel to the flames; the practical solidity of steel, reinforced with cement, as the foundation and the framework of the structure, has been fully demonstrated; the disadvantages resulting from precipitate grades, which could not well have been rectified in the early days, when rebuilding followed disastrous fires, will now be removed

and the area for the resurrected city will be vastly augmented. Engineering problems in construction have been so completely solved that no difficulty will be experienced in the rehabilitation of San Francisco in such a way as to make it almost immune from the effects of shock and conflagration in the future and the new city will be, when the work shall be completed, a marvel of modern construction. Millions of money will be required, but it will be easily obtained. The insurance upon the property destroyed will supply much that may be needed; appropriations by the Federal government for public buildings and by the state and municipality for those required for the use of the commonwealth and the city, will be liberal; capital for private enterprises and for the restoration of residences will be provided without stint and the bond issues made necessary will find a market in every section of the country. The financial quarter will doubtless receive the earliest attention and the institutions themselves may be expected to undertake the rebuilding of edifices for their own individual requirements. The section of the city which is devoted to commercial enterprises has been spared by the flames and probably nothing more will be needed there than ordinary repair.

#### REVIVAL OF PRODUCTIVE ACTIVITIES.

It is true that the calamity was appalling, and, measured by loss of life and destruction of property, quite unprecedented in magnitude. It is not, however, of such a wide spread disastrous character as would result from the partial blighting of a single one of our season's crops—grain, cotton or hay for example. Such a calamity would be an unparalleled national loss and it would be felt by vast

numbers of the community in a greater or less degree; it might, however, be speedily reparable by the next or later succeeding crops. The land in the residential and business areas will doubtless be more valuable because of its improvement through rebuilding, filling in and regrading; the money and securities in the vaults of the financial institutions are intact and they will be made available. The business that has been suspended by reason of the destruction of stores and warehouses, will be resumed with energy when these structures shall be replaced. Commerce will have even more rapid development in consequence of its temporary interruption, and industrial enterprises will be speedily resumed now that the shock of the disaster has been expended.

#### **THE CALIFORNIA BANKS IN A SUBSTANTIAL POSITION.**

It may be observed that one of the chief contributory causes for mercantile defaults is loss by fire. Inasmuch as such loss has in this case been enormous, and in very many cases not offset by insurance or through salvage, there will doubtless be more or less anxiety felt in banking circles—until the actual loss shall be determined and the sum of such loss be reducible through insurance—regarding the solvency of their debtors. The banking organizations of the Pacific states, which doubtless are chiefly interested, were in such a position, as regards accumulated surplus and undivided profits, as to be able to meet losses sustained through defaults by their borrowers without the least embarrassment or a material reduction of their surplus. Therefore with the fire losses minimized because of the prompt response of insurance companies; with needs largely met in consequence of liberal contributions of

money for relief, and with assistance extended for the resumption of productive activities, local and other capital will be confidently and liberally employed.

#### FATHER OF THE NEW SAN FRANCISCO.

Daniel Hudson Burnham, builder of cities, expects San Francisco to take its place as the American Paris in the arrangement of its streets and the American Naples in the beauty of its bay and skies. The plans for the ideal San Francisco were his, and hardly had his report been printed than the columns of the old city went down to ruin and fire swept out of existence the landmarks by the gate of gold.

It is now the question, How far will the new San Francisco realize the dreams of those who have had before them for so many years the image of a metropolis of the Pacific with broad boulevards and great parkways and wooded heights—a city of sunken gardens, of airy bridges, of stately gardens and broad expanses?

Upon the invitation of the Association for the Improvement and Adornment of San Francisco Mr. Burnham went to the Golden Gate, where he devoted months to the plans for a new city. A bungalow was built on the Twin Peaks seven hundred feet above the level of the streets, from which Mr. Burnham and his staff of assistants could command a view of the city and the bay. The material which they sought to make into the perfect city was before them day and night. They saw San Francisco by sunlight, in fog, in storm or in the blaze of a myriad lights. As the work progressed the San Franciscans who were interested in the scheme often climbed to the bungalow to watch the progress of the work.

## PLANS A CIVIC CENTRE.

The scheme prepared by Mr. Burnham provided, first, for a civic centre where all the principal city buildings were to be located and also the new union railroad station. About this was to be a broad, circular boulevard, a perimeter of distribution, and beyond this a series of broader boulevards or parkways connecting the hills, which were to be converted into parks themselves.

About this was to have been the encircling boulevard following the shore line of the peninsula. The scheme included also the extension of the avenue leading to the Golden Gate Park, known as the Panhandle, the building of a Greek amphitheatre on the Twin Peaks, with a statue of San Francisco greeting the countries of the Orient. The plan also provided for a new parade ground at the Presidio and the building of numerous parks and playgrounds throughout the city. All this was to have cost millions, but to a man of the largeness of view of the City Builder this was a detail which was to be reckoned with year by year.

Now that buildings which were to have been acquired by the city to make room for the pathways of the ideal San Francisco have been swept away by fire, it may be that the vision of Daniel H. Burnham may be realized, not in years but in months.

Like most men who accomplish things Mr. Burnham is not given to talking. He said that he did not think the work which he had done entitled him to the name of Builder of Cities, which had been bestowed upon him.

'As a matter of fact,' he said, "I did not do so very much. I served on a few commissions."

He is square shouldered and has the bearing frequently noticed in men of his type who are accustomed to deal-

ing with difficulties and overcoming them. His eyes are genial and kindly and they show the artist and the idealist as strongly as the firm chin reveals the aggressive business man. He is a combination of the poet and the utilitarian, for he is as romantic as he is practical. The designer of the Jewel by the Golden Gate is also the architect of the Flat-iron Building.

"What do you think of San Francisco?" he was asked.

"San Francisco," he replied, and his eye kindled as he spoke, "has the finest site for a city in the world. No words can do justice to the natural beauties which surround it. It can be easily a second Paris."

"But will it?" was asked.

"That is hard to say," replied Mr. Burnham. "It was the original intention that a change should be made gradually. In order to carry out the scheme considerable legislation will be necessary. It was intended that Baltimore after the fire should be completely remodelled as far as its streets were concerned, but, as is well known, not all of these plans were carried out. The improvement of Paris is still being carried on in conformity with the plans prepared by Baron Hausmann, and it will be many years before they are completed. In the French capital boulevards are still being constructed and changes made in accordance with the Haussman scheme."

#### MANY CHANGES NECESSARY.

"It is an unfortunate thing that our American cities are not first laid out in accordance with some definite idea. As a matter of fact, however, they simply grow up and later have to be changed in order to give them symmetry. In Europe the whole idea is different. The government

has more control over such affairs than it has in this country, and it prescribes just what the height of the buildings shall be. The result is a skyline which is imposing. In this country each man builds for himself.

"San Francisco interested me greatly," he added, "on account of its possibilities. I have never enjoyed my work more than I did there on the top of Twin Peaks, with the city lying beneath us. Everybody who was connected with the plan was enthusiastically interested in its success."

#### LEFT OUT CHINATOWN.

Mr. Burnham's plan for the New San Francisco left Chinatown out of the reckoning, as there was talk of private capital arranging for the transfer of the quarter to another part of the city. It was the opinion of Mr. Burnham that Chinatown, as occupying a valuable section of San Francisco, would eventually have to go.

"Twin Peaks," runs the report made by Mr. Burnham, "and the property lying around them, should be acquired for park purposes by the city. The idea is to weave park and residence districts into interesting and economic relations, and also to preserve from the encroachments of building the hill bordered valley running to Lake Merced, so that the vista from the parks to the ocean shall be unbroken. It is planned to preserve the beautiful canyon or glen to the south of Twin Peaks and also to maintain as far as possible the wooded background formed by the hills looking south from Golden Gate Park. This park area of the Twin Peaks, which includes the hills which surround the San Miguel Valley and is terminated by Lake Merced, is a link in the chain of parks girdling the city.

"To the north of Twin Peaks lies a natural hollow.



Here it is proposed to create an amphitheatre or stadium of vast proportions. The gentler slopes of the Twin Peaks will probably be used as villa properties. The plans for Twin Peaks also include a collective centre or academy which is to be arranged for the accommodation of men in various branches of intellectual or artistic pursuits. A little open air theatre, after the Greek model, would form a part of this scheme."

Even Telegraph Hill is to have its precipitate sides terraced and is to be transformed into a park, according to the design of Mr. Burnham. To carry out all the plans of the architect will be a large task, but the citizens of the new San Francisco expect that the broad general lines will be laid down and then in the course of time the rest will be added.

## GREAT FIRES OF THE PAST.

The San Francisco fire takes rank as the most destructive conflagration in all history, being a calamity of far greater magnitude even than the famous fires of London and Chicago. Present indications are that it has done upward of \$300,000,000 damage and has made 300,000 people homeless. The greatest fires of history have been as follows:

Great fire of London, September 2-6, 1666; 436 acres devastated, 89 churches, many public buildings and 13,200 houses destroyed; 200,000 people made homeless.

Cornhill Ward of London, March 25, 1748; 200 houses burned.

New York City, December 16, 1835; 600 warehouses destroyed; loss, \$20,000,000.

Charleston, S. C., April 27, 1838; 1158 buildings destroyed.

New York City, September 6, 1839; 46 buildings destroyed; loss, \$10,000,000.

Pittsburg, April 10, 1845; 1000 buildings destroyed; loss, \$6,000,000.

New York City, June 28, 1845; 1300 dwellings destroyed.

New York City, July 19, 1845; 302 buildings destroyed and four lives lost.

Albany, N. Y., September 9, 1848; 600 buildings destroyed; loss, \$3,000,000.

St. Louis, May 17, 1849; 15 blocks of houses and 23 steamboats destroyed; loss, \$3,000,000.

San Francisco, May 3-5, 1851; 2500 buildings de-

stroyed, many lives lost; loss, \$3,500,000.

San Francisco, June 22, 1851; 500 buildings destroyed; loss, \$3,000,000.

Portland, Me., July 4, 1866; city practically destroyed; 10,000 made homeless; loss, \$15,000,000.

Chicago, October 8-9, 1872; 17,450 buildings destroyed, 200 people killed, 98,500 made homeless; loss, \$200,000,000. The most destructive fire ever known prior to the San Francisco calamity.

Boston, November 9, 1872; 800 buildings burned; loss, \$80,000,000.

Baltimore, February 7-8, 1904; 2500 buildings burned; loss, \$70,000,000.

It will be seen that the great Chicago fire is second in the extent of loss of life and property loss to that at San Francisco. The great fire most recently in the minds of the people was that at Baltimore. The whole nation was appalled at the extent of that disaster. Something of the awful catastrophe at San Francisco may be imagined when the fact is stated that it is twenty times greater than the calamity at Baltimore. The Baltimore burned district contained nearly 140 acres, while at San Francisco, six square miles, or nearly 4000 acres were burned over. The extreme length of Baltimore's burned district, north and south, was 2900 feet; east and west, 3800 feet. The extreme length of San Francisco's devastated area, north and south, was 21,000 feet, or four miles, and the extreme length, east and west, 15,700 feet, or three miles. The outer margin of the San Francisco fire was 26 miles long. In the Baltimore fire, 73 blocks and 25 isolated sections along the water front, or 93 squares, were destroyed. In San Francisco more than 1000 blocks were wiped out. The total number of buildings

destroyed in Baltimore was 1343, while 15,000 buildings were burned or razed by the earthquake in San Francisco. Conservative estimates place the actual property damage in Baltimore at \$150,000,000, on which \$50,000,000 in insurance was carried, of which \$32,000,000 actually was paid. The actual property damage in San Francisco equals \$300,000,000, on which \$150,000,000 will eventually be paid. In Baltimore 20 banks, 8 hotels, 1 theatre and 1 church were destroyed. In San Francisco, 4 banks, 7 hotels, 6 theatres, 17 churches and 2 markets, though this does not include smaller banks and hotels.

But what makes the Baltimore fire fade into insignificance beside the Western disaster is that while in Baltimore few homes were burned and, so far as known, no lives were lost; in San Francisco thousands were left homeless and 1,000 persons perished.

#### THE CHICAGO FIRE.

The Chicago fire first called to the attention of this country the possible fate of great cities when attacked by this destroyer. That catastrophe startled the country as few disasters ever have done. The wave of horror, and following it the greater wave of sympathy and will to aid, equalled in intensity similar phenomena which followed the blow to San Francisco.

The conflagration commenced by the overturning of a lamp, in a district built up almost exclusively of wood, about nine o'clock in the evening of Sunday, October 8, 1871; it continued through that night and the greater part of the next day, lapping up great blocks of houses, and growing by what it fed on. It was finally checked by ex-

plosions of gunpowder in a line of houses on the south of the fire, and exhausted itself on the north by burning all there was to ignite. The area burned over in each division of the city was as follows: West division (in which the fire originated), 194 acres; South division, 460 acres; North division, 1470 acres. The total area burned was 2124 acres, or nearly 3 1-3 square miles, about 4 miles in length, and from 1 to 1½ miles in width. The season had been excessively dry; the rainfall in Chicago for the summer had been 28½ per cent. of the average. There was a strong southwest wind, made a very sirocco by the heat, and taking irregular, fantastic and uncontrollable off-shoots and eddies, which spread the fire in all directions except west. The city fire department, though large and efficient, had been exhausted by an unusually extended fire the Saturday preceding, and the flames outran even their earliest efforts. Wooden buildings were scattered throughout the entire city, acting as brands to spread the conflagration. These were the main conditions of the fire.

#### 98,860 PEOPLE HOMELESS.

The total number of buildings destroyed was 17,450, and 98,860 people were rendered homeless; of the latter 250 perished in the flames or lost their lives from exposure. Thousands, flying before the flames, sought refuge in the lake, and remained standing in the water for hours as the only means of preservation against the intense heat and the showers of sparks and cinders. Among the buildings destroyed were the custom-house, post-office, courthouse, chamber of commerce and nearly all the churches, railway stations, hotels, banks, theatres, newspaper offices, and

buildings of a quasi-public character. It is estimated that 73 miles frontage of streets was burned over, most of which had been improved with wood block pavements; these were partially destroyed. The total loss has been estimated at \$196,000,000—of which \$53,000,000 represented the value of the buildings destroyed, \$58,710,000 the personal effects, and the remainder business stocks, produce and manufactures of every description. On the losses there was an insurance of \$88,634,122, of which about one-half was recovered. A vast system of relief was organized, which received the most generous aid from all parts of the world. The money contributions from the various States and from abroad were \$4,996,782; of this England contributed nearly \$500,000. These funds, which were over and above the contributions of food, clothing and supplies, were made to last, under the careful and honest administration of a society of citizens till the close of the year 1876. Out of them temporary homes were provided for nearly 40,000 people; barracks and shelter-houses were erected, workmen were supplied with tools and women with sewing-machines; the sick were cared for and the dead buried; and the poorer classes of Chicago were probably never so comfortable as within two or three years after this fire.

#### HOW THE CITY WAS REBUILT.

The work of rebuilding the city was accomplished with marvelous rapidity. Immediately after the fire, the most sanguine persons predicted that it would require at least ten years to restore the buildings that had been destroyed. But within three years the city was provided with buildings equal in capacity and of two-fold value. The work was

begun before the cinders were cold, and the population seemed to gain new ambition and new energy from the disaster. The "fire limits" were extended so as to prevent the erection of other than stone, brick or iron buildings within a large area, and subsequently this prohibition was applied to the entire city. The result has been to make new Chicago the most beautiful city in America in its business center.

But it is within the last five years that the architectural development of Chicago has been greatest and most marked. The construction of buildings of 12, 14 and even 18 and 20 stories has become so common that the erection of half-a-dozen new "skyscrapers" is hardly noticed. Office buildings containing from 400 to 600 rooms are common, and even larger buildings are projected. No city on earth can boast of such commercial buildings as Chicago, while the structures devoted to manufacturing purposes are unequalled anywhere. Side by side with this, the erection of public buildings and private residences has gone on apace until Chicago stands second only to New York among American cities. The swift rehabilitation of the city is prophetic of what will happen at San Francisco. The same indomitable spirit, born, perhaps of the West, is the proud possession of the people of the city that sets a watch at the Golden Gate. Just as the new Chicago, that rose on the ashes of the old was a greater city than had been, so the new San Francisco will be greater. Chicago's inspiration came largely from the fact that it stood in a position of strategic importance to the vast West which was then on the threshold of a tremendous commercial importance. In the case of San Francisco there is even greater inspiration to be got from her commercial future. The great Orient is only beginning the era of its importance as a

market for American products. Through the Golden Gate is to stream a commerce, growing each year in extent and importance, even greater than that which has grown up in the territory which pays tribute to the marts of Chicago. It is no empty prediction that a greater future spreads out before San Francisco than before any American port. The whole nation will share in the prosperity which must come, not only to San Francisco, but to every port on the Pacific Coast, which flings open its portals for the trade of the East. Mighty China is awakening. Manchuria, to the northward, is to be an ever increasing market. American merchants already have invaded some of the most promising territory. One day all of China will be opened to the trade of the world; the people will awake to needs now undreamed of in their primitive state. Every producing country in the world will be a competitor for the rich stakes offered, but American enterprise will, beyond doubt, dominate the ever widening Asiatic market. It is through San Francisco, largely that the trade must flow; that which, in ever increasing volume, will flow from the East toward the American and European markets. It is to realize all the boundless possibilities of this golden future that the city must rise, as her sister, of the mid-west rose, thirty-five years ago.

#### THE GREAT FIRE AT BOSTON.

A little more than a year after the Chicago fire the nation was startled again by a similar disaster which visited Boston.

The buildings of Boston having from the first been largely of wood—the use of which material for that pur-



pose is now under severe restrictions—and closely compacted, the old town suffered from frequent and disastrous conflagrations, several of which were successively described as “The Great Fire.” There had been ten of these disasters, severe under the then existing circumstances, before the year 1698. In 1711, the townhouse and a meeting house, both of brick, and a hundred dwellings were destroyed. In 1760 a conflagration consumed 349 dwellings, stores, and shops, and rendered more than 1,000 people homeless. But these and all subsequent ones were eclipsed in their devastation by the disaster of November 9-10, 1872, in which hundreds of costly warehouses filled with goods, with banks, offices, churches, etc., were destroyed, though all of brick or granite, involving a loss of over \$80,000,000. It is an evidence of the energy and resources of the citizens, that in a little more than two years after the catastrophe, the whole “burnt district,” with widened and improved thoroughfares, was covered with solid, substantial, and palatial edifices combining all the safeguards, improvements, and conveniences of modern skill.

Here, again, American pluck came to the fore. This time the sturdy New England stock was called to show its mettle. And when the battle had been won it remained an open question whether New England valor or western pluck had gained the day. At any rate, just as Chicago had met the crisis and come off victor, so Boston, in her hour of trial, won the laurel and the bay. And the same moral must be pointed; for what Boston, on the Atlantic seaboard, did, San Francisco, on the shores of the Pacific, will do.

#### THE BALTIMORE FIRE.

The Baltimore fire, to which reference has been made

by way of comparison, will always be numbered among the great disasters to American cities, though outdone by the extent of the catastrophes at Chicago, Boston and San Francisco. In the case of Baltimore, the blow was struck mainly at the business life of the city. So far as known no life was lost directly as the cause of fire and only a few score were rendered homeless. The fire ravaged the business districts of the city, leaving the residence sections intact. It began on Sunday afternoon, February 7, 1904, and burned for forty-eight hours. Fire apparatus from Washington, Philadelphia, New York, and a score of smaller cities in Maryland, Pennsylvania and New Jersey was sent to aid the Baltimore department and the credit of stopping the avalanche of flame on the eastern edge, within five hundred yards of the city's great tenement house district was accorded to the volunteers from New York. The damage amounted to \$150,000,000. Insurance of \$59,000,000 was paid. The city declined to accept outside assistance, though this was freely proffered from all parts of the country. The Mayor, Robert M. McLane, sent abroad a brave message declaring that the blow had fallen exclusively on the business interests, that there was no human want or suffering, and that, unassisted, the business interests of the city would meet the crisis and rebuild their city on a bigger and better scale than it had known. All of this was accomplished. Within a year tremendous strides had been made toward rebuilding. In the meantime business had invaded residence sections, even the fashionable thoroughfares of the city, and, despite the handicap of temporary and incommodious quarters had not only held their own in a commercial way but had increased

the commercial importance of the Gateway City of the South.

#### THE FIRE OF LONDON.

The fire, which, in 1666, destroyed the greater part of the city of London, is among the great tragedies of history. Despite the fact that more than three centuries have passed since this catastrophe, no great fire occurs but that the event is a matter of mention. In D. Hume's History of England, this reference to the event is found:

“While the war (with the Dutch) continued without any decisive success on either side, a calamity happened in London which threw the people into great consternation. Fire, breaking out (September 2, 1666) in a baker's house near the bridge, spread itself on all sides with such rapidity that no efforts could extinguish it, till it laid in ashes a considerable part of the city. The inhabitants, without being able to provide effectually for their relief, were reduced to be spectators of their own ruin; and were pursued from street to street by the flames which unexpectedly gathered round them. Three days and nights did the fire advance; and it was only by the blowing up of houses that it was at last extinguished. \* \* \* About 400 streets and 13,000 houses were reduced to ashes. The causes of the calamity were evident. The narrow streets of London, the houses built entirely of wood, the dry season, and a violent east wind which blew; these were so many concurring circumstances which rendered it easy to assign the reason of the destruction that ensued. But the people were not satisfied with this obvious account. Prompted by blind rage, some ascribed the guilt to the republicans, others to the Catholics. \* \* \* The fire of London, though

at that time a great calamity, has proved in the issue beneficial both to the city and the kingdom. The city was rebuilt in a very little time, and care was taken to make the streets wider and more regular than before. \* \* \* London became much more healthy after the fire.

A closer view of the great fire may be had in the pages of Evelyn's Diary, a contemporaneous publication, under date of September 7, 1666. The writer's experiences are thus quaintly described:

"I went this morning (Sept. 7) on foot from Whitehall as far as London Bridge, thro' the late Fleete-street, Ludgate hill, by St. Pauls, Cheapeside, Exchange, Bishopgate, Aldersgate and out to Moorefields, thence through Cornehill, etc., with extraordinary difficulty clambering over heaps of yet smoking rubbish, and frequently mistaking where I was. The ground under my feete so hot, that it even burnt the soles of my shoes. \* \* \* At my returne I was infinitely concerned to find that goodly Church St. Pauls now a sad ruine. \* \* \* Thus lay in ashes that most venerable church, one of the most ancient pieces of early piety in ye Christian world, besides neere 100 more. \* \* \* In five or six miles traversing about I did not see one loade of timber unconsum'd, nor many stones but what were calcin'd white as snow. \* \* \* I then went toward Islington and Highgate, where one might have seen 200,000 people of all ranks and degrees dispers'd and lying along by their heaps of what they could save from the fire, deploring their losse, and tho' ready to perish for hunger and destitution, yet not asking one penny for reliefe, which to me appear'd a stranger sight than any I had yet beheld."

## EARTHQUAKES IN AMERICA

Mallett's earthquake catalogue contains the record of nearly 7000 seismic disturbances, but of these only a very small number affected the northern part of this hemisphere. While earthquakes are on the record here as far back as 1755, when the inhabitants of Boston were scared by falling chimneys at about the time when Lisbon was destroyed, only three serious disturbances in the North American Continent are recorded.

Two of these occurred in California. One was in 1812, when, while vesper service was being celebrated in the mission church of San Juan Capistrano, the building collapsed, burying several hundred worshipers, some fifty of whom were killed. In 1872 a series of shocks passed through the Inyo Valley, Cal., with disastrous consequences both to life and property. Chasms opened in the ground, swallowing several persons. The town of Long Pine was buried under a crumbling hillside and twenty-seven of its inhabitants lost their lives. Some extraordinary phenomena were observed on that occasion. In several places the land sank many feet. Owen's Lake rose five feet, and for several hours the waters of two tributary rivers were running backward.

### THE CHARLESTON EARTHQUAKE.

The third serious earthquake on this continent occurred in the city of Charleston, at about 10 P. M., on August 31, 1886. The first shock was the most severe, causing the loss of about fifty lives by the collapse of buildings and destroying property to the value of \$5,000,000. It was estimated at

the time that seven-eighths of the buildings in the town were wrecked or damaged. The most terrible feature to the inhabitants was the continuance of slight shocks for ten days afterward. None of these caused damage, but they kept the population in a state of constant panic, and many slept out in the streets during the entire time.

The Charleston earthquake is unique in having stricken a section where seismic disturbances were unknown. Charleston lies on a peninsula between the Cooper River, on the east, and the Ashley River, on the southwest.

“At 9.51 P. M.,” says an excellent description, “the attention of the observer in Charleston was vaguely attracted by a sound that seemed to come from the office below, and was supposed for a moment to be caused by the rapid rolling of a heavy body, as an iron safe or a heavily laden truck, over the floor. Accompanying the sound there was a perceptible tremor of the building, not more marked, however, than would be caused by the passage of a car or dray along the street. For perhaps two or three seconds the occurrence excited no surprise or comment. Then by swift degrees, or all at once—it is difficult to say which—the sound deepened in volume, the tremor became more decided, the ear caught the rattle of window sashes, gas fixtures, and other movable objects; the men in the office glanced hurriedly at each other and sprang to their feet—and then all was bewilderment and confusion.

“The long roll deepened and spread into an awful roar, that seemed to pervade at once the troubled earth and the still air above and around. The tremor was now a rude, rapid quiver, that agitated the whole lofty, strong-walled building as though it were being shaken—shaken by the hand of an immeasurable power, with intent to tear its joints asunder and scatter its stones and bricks abroad.

There was no intermission in the vibration—from the first to the last it was a continuous jar, adding force with every moment, and, as it approached and reached the climax of its manifestation, it seemed for a few terrible seconds that no work of human hands could possibly survive the shocks. The floors were heaving underfoot, the surrounding walls and partitions visibly swayed to and fro, the crash of falling masses of stone and brick and mortar was heard overhead and without.

“For a second or two it seemed that the worst had passed, and that the violent motion was subsiding. It increased again and became as severe as before. None expected to escape. A sudden rush was simultaneously made to endeavor to attain the open air and fly to a place of safety; but before the door was reached all stopped short, as by a common impulse, feeling that hope was vain—that it was only a question of death within the building or without, of being buried beneath the sinking roof or crushed by the falling walls. The uproar slowly died away in seeming distance. The earth was still, and Oh! the blessed relief of that stillness.”

The Charleston quake was divided into five phases. Preliminary tremors and murmuring sounds lasted about twelve seconds, and, although they increased in strength, they were succeeded somewhat suddenly by the violent oscillations of the second phase, followed by a third phase of much less intensity, and a fourth of stronger oscillations, lasting about fifty seconds. The fifth phase, in which the tremors died out rapidly, continued about eight seconds, so that the total duration of the earthquake was not less than seventy seconds.

Many persons in the vicinity asserted that they saw waves moving along the surface of the ground. A Charles-

ton resident, describing this phenomenon, said: "The vibrations increased rapidly and the ground began to undulate like the sea. The street was well lighted, having three gas lamps within a distance of 200 feet, and I could see the earth waves distinctly. They seemed to come from both southwest and northwest, and crossed the street diagonally, intersecting each other, lifting me up and letting me down as if I were standing on a chop sea. I could see perfectly, and made careful observations, and I estimate that the waves were at least two feet in height."

#### EARTH TREMORS OF CALIFORNIA.

According to Professor E. S. Holden's catalogue of California earthquakes, covering the years between 1769 and 1896, ten of the earthquakes of the nineteenth century were sufficiently serious to crack the walls of buildings and discourage the erection of high and fireproof brick and stone buildings, thus always laying the city more liable to destruction in case of fire.

In the thirty-six years between 1850 and 1886 there were in San Francisco alone 254 separate light seismic disturbances, and in the same time in the entire State there were 514 tremors. A very severe shakeup was on October 8, 1865, when the tremor cracked the walls of many buildings, and so frightened the people that a lot of pioneer families left the city and State. The weird murmur and the clattering of loose objects on the earth that go with earth tremors have since become familiar things to San Franciscans.

A very severe shock in 1852 destroyed one of the ancient and picturesque missions of the Franciscan Fathers in Southern California. It was felt in San Francisco, but it did little damage there.



On March 26 and 27, 1872, there was a series of violent shocks in the Inyo Valley, which destroyed several small towns and killed some thirty persons. The disturbance was felt in San Francisco, where the usual cracking of building walls accompanied the quiver. Great damage was done the Lick House, a well-known hotel.

A shock in 1898 did much damage in San Francisco, though it did not cause any loss of life. It began at 11.43 on the morning of March 31. Houses were shaken to their foundations, and even the old residents who were used to the ordinary tremors were excited. A tidal wave accompanying the shock rolled in from the bay to wreck small boats and parts of the docks. The city was cut off from telegraphic communication for several hours. Since that time no buildings more than two stories in height have been erected on the Government reservation on Mare Island, for the seismic disturbance of 1898 did over \$150,000 damage to the naval station there.

This shock was felt in Central and Northern California. Serious damage was done in three or four small interior towns, where fires started. The tremor of 1898 is said to have been the severest San Francisco ever experienced, and it was counted remarkable that no lives were lost.

#### RESIDENTS USED TO SHOCKS.

Little news comes out of San Francisco about the ordinary and frequent tremors or "temblores," as they are called, for it is not good business for the city. Strangers sojourning there are sometimes alarmed by the quivering of the earth that makes gas fixtures clatter and the bed shake, but the old San Franciscan will always count such

things as nothing, pooh-poohing the idea of danger. Often a stranger who sees usually stable things about him cutting up is told that blasting just outside the city is responsible for the shock. In most cases it is some slight seismic disturbance that is responsible.

The City Hall in San Francisco was one of the very finest buildings in the city, and the people are proud of it. It cost \$7,000,000. One Sunday, not long ago, it was noticed that the peak of one of the twin towers had been jarred from its base. It was denied that seismic disturbances had caused it, but the popular idea laid it all to the "temblores."

San Francisco seems to be always the subject for either very sudden evil fortune or very sudden good fortune. In 1849 her population was about 20,000. It had just sprung up into a somewhat big city for those days and that section of the country, following the discovery of gold in her neighborhood. Like a mushroom it had grown, coming up almost in a night from a little village that was almost a century old.

#### THE FIRST BIG FIRE.

While the city was experiencing the first influx of good fortune there came the first big fire, in 1849. All the buildings on Kearny Street, between Washington and Clay, were swept away. The loss was \$1,000,000, which was big for a city of its size. Lumber and labor were hard to get. The wages for laborers went up as much as \$8 or even \$16 a day.

But in spite of the difficulties, San Francisco built up her burned district with even better houses than had been there before. Then the next year, on May 4, 1850, three

whole blocks were eaten up by the flames. Two of them were between Clay, Jackson, Kearny, and Montgomery Streets. The other one was bounded by Washington, Kearny, Jackson, and Dupont Streets. Parts of other blocks were burned. The loss this time was \$3,000,000.

In a perfect frenzy the San Franciscans began to rebuild. Six weeks later, on June 14, a fire swept away everything bounded by Clay, California and Kearny Streets and the water front. Again the loss was \$3,000,000. Nevertheless, rebuilding was begun at once, the effort always being to put up better houses than had burned down. In the last two fires the merchants had suffered heavily. Piles of goods lay about on the streets and much of it was stolen. The harbor was filled with old hulks that were used to store away the goods that had been dragged from the burning buildings.

The next year, on the anniversary of the fire of May 4, flames swept over the entire business section of the city, burning what had escaped former fires and what had been built since they devastated San Francisco. The damage this time was \$7,000,000. More than 1,500 houses were destroyed, and many persons were killed. Workmen connected with two of the several brick stores remained inside their walls to protect the goods. They perished.

#### SIXTEEN BLOCKS BURNED.

The flames raged over sixteen blocks, ten being bounded by Pine, Jackson, Kearny, and Sansome Streets; five by Sansome, Battery, and Sacramento Streets and Broadway, and one by Kearny, Montgomery, Washington, and Jackson Streets. The Custom House and the old Jenny Lind Theatre were destroyed. A man suspected of

having set the fire was beaten to death in the sight of the flames he was supposed to have started. A Vigilance Committee took charge of the city. The harbor was filled with still more hulks that were brought from anywhere to hold the goods of the merchants. San Francisco was more a city of the water than of the land.

But San Francisco was not done with fires for even a breathing spell. A few weeks later, June 22, eight more blocks went to ashes. There wasn't much to San Francisco then but a few little houses on the outskirts of what had been the city and a motley collection of hulks that choked the harbor.

One reason why the fires had been so disastrous was that the buildings were of wood. As the city built up after that finer and more substantial buildings took the place of those that had been destroyed, but always the thought of earth tremors influenced builders to put up frame structures.

#### LAST PREVIOUS EARTHQUAKE.

The last earthquake that occurred in San Francisco before that of April 18, was about the middle of January, 1900. Several distinct shocks were felt early in the morning, causing the vibration of buildings all over the city. The chief building affected was the St. Nicholas Hotel, which was severely shaken. The walls collapsed in parts of the structure, patrons were thrown out of their beds, and furniture was destroyed.

In 1904, there was a severe seismic disturbance in Los Angeles, which was felt throughout that city and miles around. No actual damage was done, but this was the most severe shock that had ever been felt in Southern California.

## SCIENCE BAFFLED BY THE PHENOMENON

Science is baffled by the phenomenon popularly described as "earthquake." Tremendous strides have been made in the past half century in inquiry into every realm of nature, but here there has been little progress. Wonderful advances have been made in the instruments with which earth tremors are measured and many have expressed the hope that in some future day a process will be developed by which warning can be given that such disturbances are imminent. But the day, so far as the achievements of the present are concerned, is far in the future. Every demonstration of this kind, now, is carefully studied in the light of experience and from the visible records made by the seismograph. The national government will direct the study of the San Francisco disturbance. It is expected that valuable results will be achieved, since this is the most severe shock known to have taken place on this continent. The fissures in the earth, uplifts and depression, the direction of the waves, the geology underlying the affected region, these, and a hundred considerations enter into the study. Nothing will be overlooked that may be counted on to throw any light on the general subject. The ambition of scientists engaged in the study of seismic disturbances is to perfect a system of earthquake warning. If this can be accomplished it will take a place among the greatest boons given by science to the human family. If the San Francisco disaster brings the realization of this dream nearer, it will have served a vast purpose.

For the present there is little in text books beyond theories and opinions. The newest catastrophe has brought out a new stock of these, and this chronicle would not be

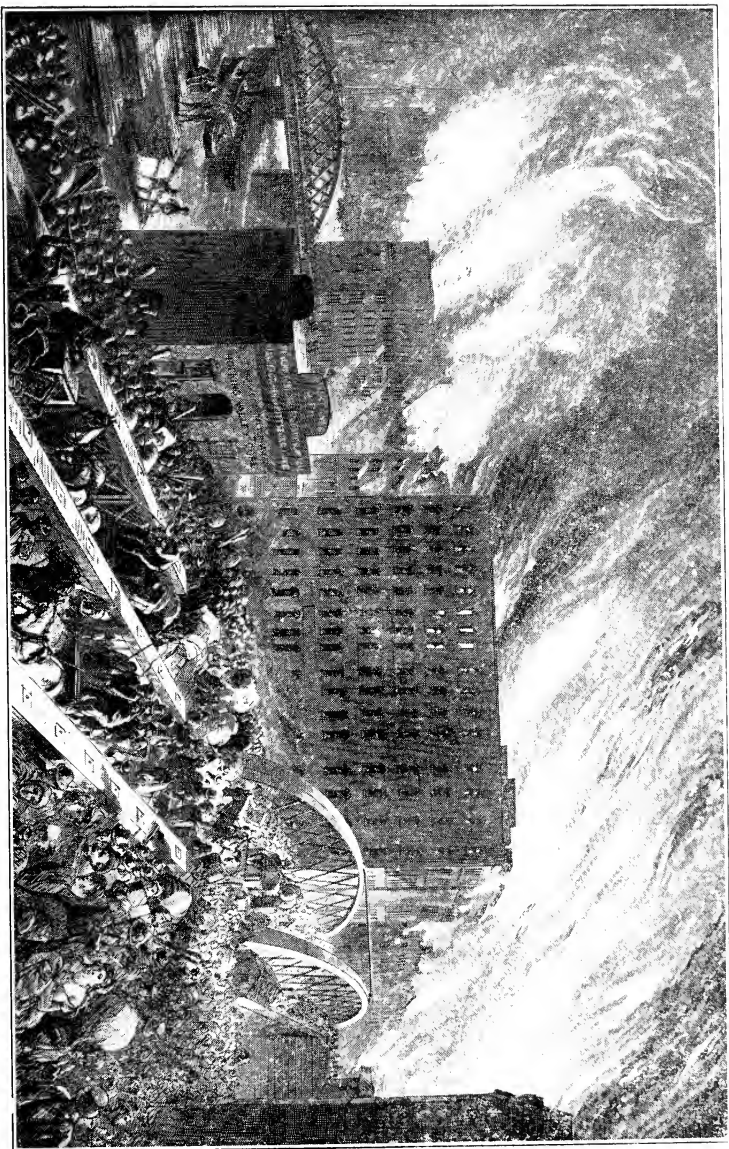
complete without mention of some at least of these. These will be the sign posts, marking where science stood when San Francisco was stricken. It may mark the starting point for a new era of knowledge that shall supersede mere theory and speculation.

#### EXPECTS TO PREDICT SHOCKS.

Dr. C. Willard, Geologist of the United States Geological Survey, believes that the time will come when scientists would be able to predict an earthquake sufficiently in advance of its occurrence to give warning to persons likely to be caught by it.

"Of course, I do not say that it will come soon," said Dr. Hayes, "but I see nothing improbable in the idea at all. I think it is largely a matter of having a sufficient number of properly equipped observation stations, with prompt and thorough exchange of observations. Earthquakes are almost invariably preceded by premonitory signs and symptoms. These are now recognized and recorded. But there are not enough observers engaged in the work to make their records and observations of practical benefit in the way I have indicated.

"Fifty years ago the idea that it would be possible to predict a storm would have been regarded as preposterous. But with the increase of the number of weather observers, and the development of the instruments, they have reached the stage of practical certainty, and the service has become of immense value throughout the world. Of course, they have had a great deal more weather to observe than the geologists have had earthquakes, and the scope and thoroughness of their observations have developed more rapidly than in the case of seismic disturbances. But I see no rea-



THE CHICAGO FIRE—THE RUSH FOR LIFE OVER RANDOLPH ST. BRIDGE.



THE BALTIMORE FIRE—THE SHOPPING DISTRICT.



son why, with a proper extension of the field of observations, and the proper equipment of the observers, there should not result, in a comparatively few years, substantially the ability to foretell, for an appreciable period of time, the occurrence of serious earthquakes.

In discussing the shocks which devastated San Francisco, Dr. Hayes said that the ultimate cause was undoubtedly "a deep readjustment" of the earth, manifesting itself upon the surface by a slip along the line of a fault. These faults occur at various places upon the earth's crust, and are similar to those found in ore or coal veins, except that their scale is thousands of feet compared to inches in the mine scale. When, for any cause, a deep readjustment takes place the surface effect usually follows the line of a fault.

"This is the greatest problem," he said, "or one of the great problems that we are studying all the time. We know that certain parts of the earth are slowly going down and other parts are rising. That has been going on in California. Only yesterday, speaking geologically, the coast line of California was lifted up to a considerable extent. The traces of the old beach line are easy to follow, and the fact that the line has been lifted to different heights at different places, and that in places it lies at an angle, and not horizontally, shows that it was lifted, and that it was not the receding of the water which left it there."

"It may be," said Dr. Hayes, "that a slip occurred somewhere at the upper, or northern, end of one of these faults, and, following down to the southeast, produced the shock that destroyed San Francisco and wrecked Palo Alto buildings."

#### NO CONNECTION WITH VESUVIUS.

"If there was any connection between the eruptions

of Vesuvius and the Causasus and Canary Island earthquakes," said Professor James F. Kemp, who occupies the chair of geology at Columbia University, "other places in all probability would have suffered, too. New York, for instance, is on the same parallel as all these places. While I would not deliver an absolute opinion, to my mind these disturbances have nothing to do with the California earthquake.

"The California coast is a place where earthquakes of more or less violence are frequent. The Pacific Coast line is one of the latest additions to our continent. Conditions there are absolutely unsettled; it is still in the making. The coast is very abrupt. It has few good harbors and is very mountainous. It is a more unstable country than any other part of the United States.

"The present earthquake in all probability was started by a slipping along some fault line, as we call it, in the interior of the earth. A fault line is a line where two or more geological deposits from the same or different formative periods meet. Accelerated by one cause or another, these deposits slip apart and create a rift. There is a consequent adjustment of the crust of the earth to the new conditions in the interior, and this generally is the cause of an earthquake. Fault lines are very common in the mountainous country of California."

Professor Kemp said he thought the earthquake in California was not of volcanic origin, and therefore had no connection with the great upheavals that have occurred from time to time in Central America and the northern part of South America. "The outer portion of the earth," he said, "from time to time adjusts itself to interior conditions. No exact theory for these adjustments has been formulated, but two or three suggestions have been advanced as to the

causes. Some think that the adjustments are due to the earth radiating and a consequent shrinkage in the interior.

#### ROTATION OF THE EARTH.

"Others believe that they are due to the fact that the earth is gradually slowing up in its rotations, causing a flattening at the poles and a swelling at the equator, and the crust of the earth is readjusting itself to this new shape.

Our mountain ranges provide the lines of upheaval in these occasional readjustments. The vibration of a slipping in the bowels of the earth naturally will extend over a certain territory, the vibrations weakening in proportion to the distance from the centre.

"The entire Pacific Coast region has been formed by some violent upheaval at a time prehistoric even as geological periods go. The surface of the Pacific in those past ages must have been much higher than its present level. We know this, because we still can discover the traces of beaches on the bluffs far above the sea. There has been no rising of the North American continent south of Alaska since it became the home of the white man. South America has been raised within the last century or so. There we can still find shellfish clinging to the rocks far above the sea.

The last change of some note that occurred on the North American continent was about five years ago when a section of Alaska about the Muir Glacier was hoisted considerably by a seismic upheaval.

#### PROF. HOVEY'S VIEWS.

Prof. Edmund Otis Hovey, Fellow of the American Geological Society and Associate Curator of the Geologi-

cal Department of the American Museum of Natural History, who visited Martinique after the recent eruption of Mont Pelee and Soufriere, said:

"All the Pacific Coast is comparatively new territory. Frequent seismic disturbances occur there owing to the fact that the mountain-building forces constantly are at work in this territory. Volcanic and seismic disturbances only mark the efforts of rigid crust of the earth to conform to the contractions due to loss of heat beneath the surface of the earth.

"San Francisco stands on ground the foundations of which were formed by ancient volcanoes. These volcanoes date from such ancient ages that there are several other geological formations on top of them and the volcanoes are deep down below the surface of the earth.

"I hardly believe that this earthquake is of volcanic origin. I would not be too positive. The nearest volcano to San Francisco is Mount Shasta. This is about 250 miles north of the Golden Gate, and has been extinct for centuries. Mount St. Helena, 300 miles north, dominating a part of Northern California and Southern Oregon, was in eruption about sixty years ago. Several small volcanoes in Northern California have been active in the last 100 years. We have little positive or first-hand knowledge of these eruptions, and know of them only through later observations, because the region where they are situated was not inhabited by white men while they were active.

This disturbance possibly may be less severe, as far as its effect on the surface of the earth is concerned, than some of those which have preceded it. It did more damage merely because it happened to strike San Francisco."

"These earthquakes very seldom occur in rapid succession. The most destructive earthquake recorded here

in the last century was the one at Charleston in 1886, but the most extensive was the one that occurred in 1812, and which is known as the New Madrid earthquake, because it extended south from that town, following the bottom of the Mississippi River. It created great changes in the surface of the earth, forming a lake seventy-five miles long.

"Such disturbances are likely to occur as long as there is any shrinkage under the surface, and that will go on until the subterranean strata have settled and all tension has been relieved."

According to Prof. Hovey, a German scientist who for years has been experimenting to trace a possible connection between barometric pressure and seismic disturbances following the mine explosion at Les Courrieres predicted a series of seismic and volcanic upheavals.

"It seems as though the prediction of the German scientist has been verified, though I won't go so far as to say that his theory, however interesting, has been vindicated," said Prof. Hovey

#### PROF. BERKEY'S OPINION.

Professor Berkey of the Department of Geology at Columbia University said:

"There is no possible connection between the eruption of Mount Vesuvius and the earthquake at San Francisco. Earthquakes are not necessarily of volcanic origin. The earth's crust in cooling contracts and often contracts unevenly, so as to cause the strata to slide. Such a sliding may have caused the San Francisco earthquake.

"Some scientists hold that volcanic eruptions are caused by a percolation of water from the sea into the heated parts of volcanoes and that the steam thus gener-

ated starts the eruption. According to the theory now generally accepted by scientists, however, volcanic eruptions are caused by steam, but not from water percolating from the sea, but from contact of the molten matter with underground masses of water. Volcanoes thus become the safety valves of the earth."

Prof. William Hallock of the Department of Physics at Columbia holds with Prof. Berkeley that a "sliding" had caused the earthquake in San Francisco.

#### MANY PACIFIC SHOCKS.

From a perusal of the bulletins of the United States Department of Geological Survey, it would appear that earthquakes, though of very moderate violence, have been of frequent occurrence in California and along the Pacific slope. The record for 1896 shows fifty-five such disturbances. In 1897 not fewer than eighty earthquakes are recorded. In 1898 there were twenty-four.

An odd circumstance manifest from the perusal of these records is that there are more earthquakes in March, April, May and June than in other months of the year. In recent years the most severe earthquake occurred on March 30, 1898. This disturbance did more damage to property than any one that had occurred since the very destructive one of April, 1892.

The earthquake of 1898 extended to Vallejo and Benicia, but caused most destruction in the Mare Island Navy Yard. It lasted only forty seconds, but in that space of time destroyed nearly half a million dollars worth of machinery at the Navy Yard. Only one San Francisco building, that at 445 Clementina street, was destroyed, but several were damaged.

Geologists agree that in the north of California, in what is known as the Lassen Peak district, between the Sacramento Valley and the Great Basin and adjoining the northern end of the Sierra Nevada, there is a region sixty-nine miles long and fifty-three miles wide in which the presence of numerous hot springs shows volcanic activity in the bowels of the earth. Throughout this district there is a belt of volcanic cones some twenty-five miles wide and fifty miles long, which recently has aroused the interest of scientists. Prof. Kemp of Columbia said that he did not believe that there was any connection between the possible activities of this chain of volcanoes and the San Francisco earthquake. The latest eruption in this region, he said, occurred some 200 years ago, when the Cinder Cone, near the centre of the district, had a violent outbreak, the latest of note in the North American Continent south of Alaska. Dense forests have since grown up in this district on a seven-foot layer of volcanic sand that was scattered all over the district and destroyed all vegetation.

#### AN OPEN QUESTION.

In spite of the declarations of some scientists that there can be no possible connection between the eruption of Mount Vesuvius and the earthquake at San Francisco, others are inclined to view certain facts in regard to recent seismic and volcanic activity as, to say the least, suggestive.

In March there was a severe earthquake in the Island of Formosa, and many lives were lost, while an enormous amount of damage was done. A few days before the San Francisco shock there was another earthquake in the same island. Still greater havoc was caused by it than by the earthquake in March, but fewer lives were lost, so far as is known at present, the reason being that the people were warned in time.

Ten days before this disaster the eruption of Mount Vesuvius reached its height and devastated the country around the volcano, covering an enormous territory with ashes, and caused the loss of hundreds of lives.

On Tuesday night, April 17, word was received from Piatigorsk, Ciscaucasia, that there had been two severe earthquake shocks the previous day in Northern Caucasia.

The same night a telegram from Madrid said that the newspapers there reported that the long-dormant volcano on Palma, the largest of the Canary Islands, was showing signs of eruption, columns of smoke issuing from the crater.

There is one very remarkable circumstance in regard to all this activity. All the places mentioned—Formosa, Southern Italy, Caucasia, and the Canary Islands—lie within a belt bounded by lines a little north of the fortieth parallel and a little south of the thirtieth parallel. San Francisco is just south of the fortieth parallel, while Naples is just north of it. The latitude of Calabria, where the terrible earthquakes occurred in 1905, is the same as that of the territory affected by the earthquake in the United States.

There is another coincidence which may be only a coincidence, but which is also suggestive. The last previous great eruption of Vesuvius was in 1872, and the same year saw the last previous earthquake in California which caused loss of life.

Prof. W. H. Pickering of the Harvard Observatory, says:

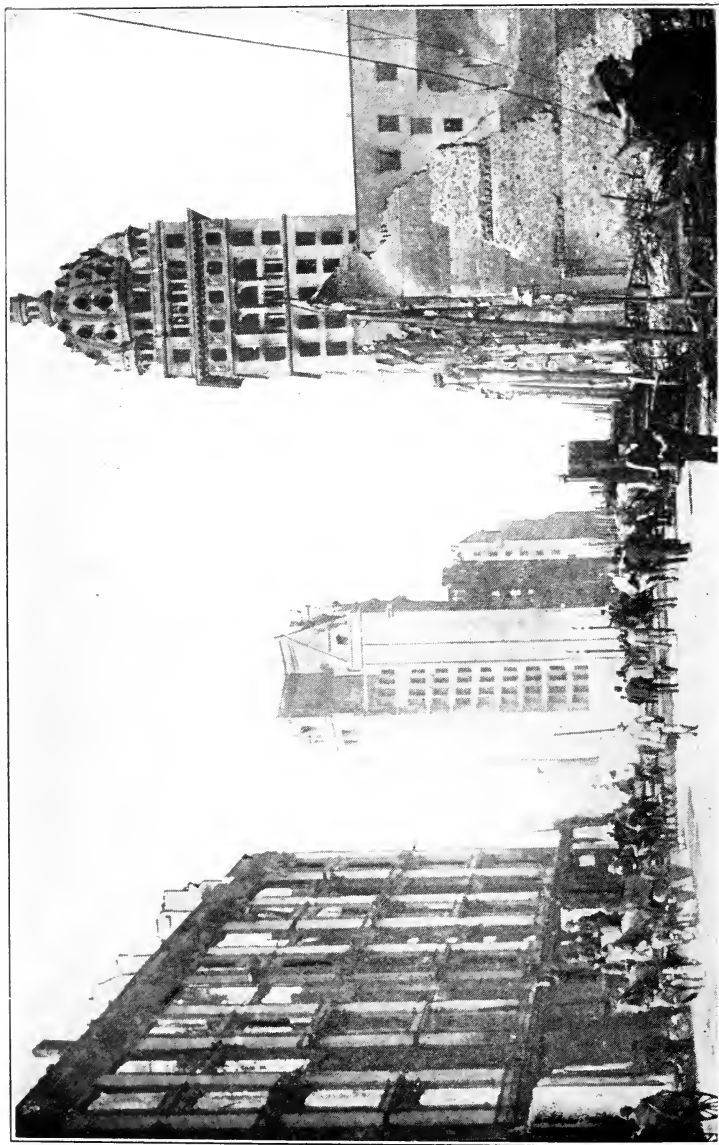
“There is no evidence that the disturbance on the Pacific Coast is the result of any volcanic action, or that it is in any way connected with the disturbances in other parts of the world.

“Where earthquakes are caused by volcanic eruptions,





THE EARTHQUAKE IN CHARLESTON, SEPTEMBER 1886—  
SCENE IN A GARDEN ON SOCIETY STREET.



MARKET STREET, SAN FRANCISCO, AFTER THE FIRE.

the disturbance extends only within a limited area, not more than a hundred miles or so. These are short and very violent. For this reason the disturbances of Mount Ranier in Washington State probably had no relation with that at San Francisco, as it is too far away.

Earthquakes of the kind occurring at San Francisco are caused by the slipping of strata at the ocean bed. This is very probably the cause of the present disaster.

"The slope from the shore to the bed of the ocean is very steep. This rests directly on the bed of the ocean, and, as frequently occurs, cracks form at the junction. The result is a slipping of the whole formation to fill up the gap.

"This may occur at once or some time later. When it does slip, the effect is felt in an earthquake on the nearest shore. This is what has occurred at San Francisco.

"Such occurrences are more frequent on the Pacific Coast than on the Atlantic, for the simple reason that the slope is much steeper there. Japan suffers frequently for this reason, and South America frequently sees such disturbances."

## HOW EARTHQUAKES ARE RECORDED.

Scientists in all parts of the world are studying every phase of natural phenomena, and among them none has greater interest, or is more baffling than the earthquake. The greatest stride ever made in this respect was the invention of the seismograph, the delicate instrument by which are measured the vibrations of the surface of the earth, resulting from earthquake shocks. This, to be sure, has no value in a premonitory sense. The seismograph gives no hint of the approach of this destroyer; it merely records the extent and duration of the shock or series of shocks. The mighty throes of the Pacific Coast, when San Francisco met her doom, was recorded wherever the slightest tremor reached a seismograph. The instruments are costly and are only in possession of a limited number of universities and government observatories. In the great seismographic division of the United States Weather Bureau at Washington, center of study, in America, of this branch of science, the delicate instruments there recorded every pulse of the California quake. The records, as they are made by the seismograph are one of the chief reliances of scientists in their efforts to solve the earthquake problem. Local evidences, too, including changes in the contour of the earth, fissures, the nature of the geological formations in the immediate vicinity of the center of the disturbance, and other features, largely visible, will aid. The opinion of scientific men is divided on the question whether any appreciable advance will ever be made toward ability to predict seismic disturbances. Most of nature's activities, even the most erratic, follow immutable laws, and a few investigators cling to the hope that even the earthquake obeys some in-

violable principle; results from causes not beyond human ken, and these earnestly pursue their studies.

The "earthquake" division of the Weather Bureau, mentioned above, is in charge of Professor C. F. Marvin, one of America's greatest authorities on seismic topics.

On one of the weather bureau seismographs was made a complete record of the great earth wave which brought death and ruin to the fair city of San Francisco.

The delicate needle of the seismograph had been tracing long, straight white lines on the gelatined surface of the record sheet Wednesday morning, when it suddenly became agitated at 8 o'clock, 19 minutes and 20 seconds, and began to make more or less elongated waves. At 8.25 o'clock the strong waves began, and the recording needle moved rapidly back and forth across the sheet. Then followed the most violent waves between 8.32 and 8.35 o'clock, 75th meridian time, as is shown by the record. At one time the motion of the needle was so vigorous that its point went off the sheet, which is kept in motion by a clock machine, and the point did not return to the sheet until there was a secondary lull in the great disturbance. Then, when the needle had resumed its tracings, the earth vibrations and waves continued until 12.35, when the agitations ceased.

Each of the lines on the record sheet represents an hour of time, the movement of the sheet keeping time with the tick of the connected clock. The units of time are marked on this sheet, which is covered with gelatine, and thus the observer is enabled to tell just when the earthquakes began and when they ended by the markings made by the needle point.

The seismograph which Prof. Willis L. Moore, chief of the weather bureau, has installed in his department is

said to be one of the best in the world. It is installed in a basement apartment away under the weather bureau building, far removed from the noisy hurly-burly of the streets, and is practically a mechanical recluse, only Prof. Marvi and the immediate observers being allowed to invade the sanctity of its subterranean home. For purposes of exhibition and explanation a duplicate seismograph is set up in a room adjoining the office of Prof. Marvin.

The weather bureau requires its observers to take careful note of earthquake phenomena of sufficient intensity to be felt at stations, but no specific effort has been made to provide generally the instrumental means by which such phenomena could be automatically recorded and measured. The central office at Washington has, however, maintained a simple form of seismograph in operation ever since December, 1892, and about three years ago greatly improved its equipment by the installation of one of the large horizontal pendulums made by J. & A. Bosch, of Strassburg, and designed after the models of Omori.

#### OF A SUPERIOR TYPE.

This instrument is of a very superior type and gives an accurate record of the movement of the earth at the pendulum in the horizontal plane. At the present time, but one of the two pendulums constituting the set has been installed and this produces a record of the north and south component of horizontal motion.

The mechanical principles involved in the construction of a seismograph of this type were first developed and applied to the measurement of earthquakes in the latter part of 1880 by James A. Ewing, then professor of mechanical engineering at the University of

Tokio, but now professor of mechanism and applied mechanics at the University of Cambridge, England. Numerous modifications have since been incorporated in the instrument by Gray, Omori and others, and in its present form it is well adapted to measure and record all kinds of earthquakes, except, perhaps, the most destructive, and is especially suited to register the feeble, unfelt earthquakes which frequently occur in all parts of the world.

The instrument in the basement room of the weather bureau is installed on separate castings secured to thick blocks of stone cemented firmly into the concrete floor of the building and projecting but a few inches above the floor level. The foundation of the instrument is separate from the building, being far down in the earth so that it will not be affected by artificial disturbances.

The extreme sensitiveness to tilting is exhibited in several ways. The weight of the observer almost anywhere on the floor of the small room in which the instrument is installed suffices to tilt the pendulum enough to show on the record. A large displacement is produced by standing at one side of the pedestal. It has been noticed also that the weight of an ice wagon which stops daily to deliver ice at a basement entrance to the building causes a definite displacement of the trace of about one millimeter, which disappears when the wagon drives away. There are no vibrations or oscillations registered, only a distinct elastic bending of the ground due to the load. This motion, moreover is communicated through the foundation walls of the building. The distance of the wagon from the seismograph is about twenty feet; the asphalted drive and the basement floor are on the same level. The subsoil is a hard clay.

It may be added that the road is a private driveway

back of the building and is rarely used, so that the effects and disturbances of the record due to its proximity are not regarded as interfering in the least with the validity of earthquake records.

“Aside from transitory tiltings of the ground of the kind just discussed, others of a more gradual character are also observed. If the pendulum were to remain absolutely stationary during twenty-four hours the record sheet would contain twenty-four straight parallel lines quite accurately spaced three millimeters apart.

#### A PROGRESSIVE TILTING.

The spacings are never exact, but are sometimes quite uniform. Generally, however, there is a distinct and progressive widening or narrowing of the spacings across the sheet, showing that a slow, progressive tilting of the column or the ground has been in progress during the twenty-four hours in question. While some of these displacements must be attributed to temperature changes and effects entirely within the instrument, yet slow tiltings of the ground also occur, due to a variety of causes. The seismograph, as now installed, answers every purpose for the registration of distinctively earthquake movements, but the slow tilting referred to cannot be studied satisfactorily in the present location of the apparatus, which for such purposes should be isolated as far as practicable.

The earthquake wave recorded here, at such a long distance from the real seat of trouble, was in the nature of a long, regular motion, like a sea wave. The motion at San Francisco was quick and sudden, and therefore very destructive. This violent agitation produced destructive strains, with the tendency to shake buildings to pieces,



whereas at a distance where the movement of the earth is slow and regular all portions of the building may follow the motion of the ground. Prof. Marvin said, in illustration, that the passing of a rapidly moving railroad train produces a vibration of the earth similar to that produced at the place where an earthquake is causing destruction, only in greatly reduced magnitude.

#### MANY USES FOR SEISMOGRAPH.

One of the scientific purposes served by the use of the seismograph is to throw light on the internal condition of the earth—as to whether it is solid or liquid, or, if solid, whether it is uniform or varying in constitution at different depths or at different parts.

Among other uses the seismograph can afford information as to causes likely to interfere with submarine cables. There have been instances of such interference which, if it had not been for the seismograph, would have been regarded as acts of war—the work of foreign enemies. The instrument of course cannot be supposed to afford absolute proof in such cases, for a cable might be broken through some natural cause other than a local seismic disturbance.”

At the Kew Observatory the instrument now in use was set up in 1898, being similar to the one Prof. Milne had in use for some time at Shide, in the Isle of Wight. During the past eight years it has recorded over 600 earth tremors, including most of the larger disturbances which have been experienced in any part of the earth since 1898—for instance, the great earthquake in Nicaragua and the disturbance due to the eruption of Mont Pelee, which led to the destruction of St. Pierre, in the Island of Martinique, and

the earthquake which took place on Jan. 31, on the same coast line as the calamity in Colombia. The records show that the disturbance of Jan. 31 began at 3.45 P. M. and continued until after 6.30.

The records are made in this way: A horizontal rod, or boom, pivoted at one end, supported by a cord and capable of swinging horizontally, is erected at the basement of the observatory on a pier which passes through the floor and rests on a concrete bed. The boom has at the free end a rectangular plate, with a minute perforation in the centre. A small gas jet is constantly burning over the perforated plate, and sends light through the perforation and past the edges of the plate, falling on bromide of silver photographic paper. The sensitized paper passes below the plate at a uniform rate controlled by clockwork. When the boom is at rest there appears upon the strip of paper a thin, straight line, (representing the light which has passed through the perforation,) and black bands representing the light which has passed over the edges of the plate. In the event of a seismic disturbance the plate oscillates, and the original narrow straight line widens out, forming a globe-shaped outline according to the amplitude of the vibrations, while corresponding indents are shown on the edges of the paper.

The exact situation of a disturbance is ascertained by comparing the time at which corresponding observations are made at other observatories. At each half hour a small hand comes in front of the light, and interrupts it at one of the margins of the sensitized paper. Should there be a disturbance, in the neighborhood of Mont Pelee, the earliest movement would be recorded at Kew before it would reach St. Petersburg; whereas, if it originated in Central Siberia,

the earliest records at St. Petersburg would precede those at Kew.

In England there are seismographs at Shide, Bidston, and Liverpool, and another in Edinburgh. The great earthquakes originate in the Japan area, in Central America, and up in Alaska. It is supposed that the sea deepens very abruptly off the Japanese coast, and in that region there are rapid changes in the stresses to which the crust of the earth is exposed. Further, wherever there are volcanoes earthquakes are liable to take place.

In Japan there are numerous seismographic observatories, and in Italy as well. It is important to have them in those countries, particularly in Japan where such tremendous havoc is wrought by earthquakes from time to time.

## CALIFORNIA, LAND OF GOLD AND ROMANCE.

California, the State which has been so sorely stricken by Providence, has a history replete with the picturesque and romantic, the grim and tragic. If now the hand of affliction is laid upon her by nature, the story abounds in lavish generosity, from that same nature. California has a wider range of climate than any State in the Union; produces a greater variety of fruits of the soil; enjoys benign influences from Pacific breezes, and boasts rich veins of every mineral, except coal. The heavens, the earth, the kingdoms under the earth pay tribute to the State which sets watch at the Golden Gate.

The settlements of the Spanish missionaries within the present limits of the State of California date from the first foundation of San Diego, in 1769. The missions that were later founded north of San Diego were, with the original establishment itself, for a time known merely by some collective name, such as the Northern Missions. But later the name California, already long since applied to the country of the peninsular missions to the southward, was extended to the new land, with various prefixes or qualifying phrases; and out of these the definite name Alta (or Upper) California at last came, being applied to our present country during the whole period of the Mexican Republican ownership. As to the origin of the name California, no serious question remains that this name, as first applied, between 1535 and 1539 to a portion of Lower California, was derived from an old printed romance, the one which Mr. Edward Everett Hale rediscovered in 1862, and from which he drew his now accepted conclusion

For, in this romance, the name California was already before 1520 applied to a fabulous island, described as near the Indies, and also "very near the Terrestrial Paradise." Colonists whom Cortes brought to the newly discovered peninsula in 1535, and who returned the next year, may have been the first to apply the name to this supposed island, on which they had been for a time resident. The coast of Upper California was first visited during the voyage of the explorer Juan Cabrillo in 1542-43. Several landings were then made on the coast and on the islands, in the Santa Barbara region \* \* \*. In 1579, Drake's famous visit took place \* \* \*. It is \* \* \* almost perfectly sure that he did not enter or observe the Golden Gate, and that he got no sort of idea of the existence of the Great Bay \* \* \*. This result of the examination of the evidence about Drake's voyage is now fairly well accepted, although some people will always try to insist that Drake discovered our Bay of San Francisco. The name San Francisco was probably applied to a port on this coast for the first time by Cerme non, who, in a voyage from the Philippines, in 1595, ran ashore, while exploring the coast near Point Reyes. It is now, however, perfectly sure that neither he nor any other Spanish navigator before 1769 applied this name to our present bay which remained utterly unknown to Europeans during all this period \* \* \*.

In 1602-3, Sebastian Vizcaino conducted a Spanish exploring expedition along the California coast \* \* \*. From this voyage a little more knowledge of the character of the coast was gained; and thenceforth geographical researches in the region of California ceased for over a century and a half. With only this meagre result we reach the era of the first settlement of Upper California.

The missions of the peninsula of Lower California passed, in 1767, by the expulsion of the Jesuits, into the hands of the Franciscans; and the Spanish government, whose attention was attracted in this direction by the changed conditions, ordered the immediate prosecution of a long-cherished plan to provide the Manilla ships, on their return voyage, with good ports of supply and repairs, and to occupy the northwest land as a safeguard against Russian or other aggressions \* \* \*. Thus began the career of Spanish discovery and settlement in California. The early years show a generally rapid progress, only one great disaster occurring—the destruction of San Diego Mission, in 1775, by assailing Indians. But this loss was quickly repaired. In 1770, the Mission of San Carlos was founded at Monterey. In 1772, a land expedition, under Fages and Crespi, first explored the eastern shore of our San Francisco Bay, in an effort to reach by land the old Port of San Francisco \* \* \*. After 1775, the old name began to be generally applied to the new Bay, and so, thenceforth, the name Port of San Francisco means what we now mean thereby. In 1775, Lieutenant Ayala entered the new harbor by water. In the following year, the Mission at San Francisco was founded, and in October its church was dedicated. Not only missions, however, but pueblos, inhabited by Spanish colonists, lay in the official plan of the new undertakings. The first of these to be established was San José, founded in November, 1777. The next was Los Angeles, founded in September, 1781.

#### BEFORE GOLD WAS DISCOVERED.

Early in 1846, the Americans in California numbered about 200, mostly able-bodied men, and who in their accu-  
r was universal throughout the territory. This quickened

tivity, enterprise, and audacity, constituted quite a formidable element in this sparsely inhabited region. The population of California at this time was 6,000 Mexicans and 200,000 Indians. We now come to a period in the history of California that has never been made clear, and respecting which there are conflicting statements and opinions. The following facts were obtained by careful inquiry of intelligent parties who lived in California during the period mentioned, and who participated in the scenes narrated. The native Californians appear to have entertained no very strong affection for their own government, or, rather, they felt that under the influences at work they would inevitably, and at no very distant period, become a dismembered branch of the Mexican nation; and the matter was finally narrowed down to this contested point, namely, whether this stage surgery should be performed by Americans or English, the real struggle being between these two nationalities. In the northern part of the territory, such native Californians as the Vallejos, Castros, etc., with the old American settlers, Leese, Larkin, and others, sympathized with the United States, and desired annexation to the American republic.

In the south, Pio Pico, then governor of the territory, and other prominent native Californians, with James Alexander Forbes, the English consul, who settled in Santa Clara in 1828, were exerting themselves to bring the country under English domination. \* \* \* This was the state of affairs for two or three years previous to the Mexican War. For some months before the news that hostilities between the United States and Mexico had commenced, reached California, the belief that such an event would certainly occur was universal throughout the territory. This quickened the impulses of all parties, and stimulated the two rivals—

the American and English—in their efforts to be the first to obtain a permanent hold of the country. The United States government had sent Colonel Fremont to the Pacific on an exploring expedition. Colonel Fremont had passed through California, and was on his way to Oregon, when, in March, 1846, Lieutenant Gillespie, of the United States marine service was sent from Washington with dispatches to Colonel Fremont. Lieutenant Gillespie went across Mexico to Mazatlan, and from thence by sea to California. He finally overtook Fremont early in June, 1846, a short distance on the road to Oregon, and communicated to him the purport of his dispatches, they having been committed to memory and the papers destroyed before he entered Mexico. What these instruction authorized Colonel Fremont to do has never been promulgated, but it is said they directed him to remain in California, and hold himself in readiness to coöperate with the United States fleet, in case war with Mexico should occur. Fremont immediately returned to California, and camped a short time on Feather River, and then took up his headquarters at Sutter's Fort.

#### DECLARED INDEPENDENT.

A few days after, on Sunday, June 14th, 1846, a party of fourteen Americans, under no apparent command, appeared in Sonoma, captured the place, raised the Bear flag, proclaimed the independence of California, and carried off to Fremont's headquarters four prominent citizens, namely, the two Vallejos, J. P. Leese, and Colonel Prudhon. On the consummation of these achievements, one Merritt was elected captain. This was a rough party of revolutionists, and the manner in which they improvised the famous Bear flag shows upon what slender means nations and kingdoms



are sometimes started. From an estimable old lady they obtained a fragmentary portion of her white skirt, on which they painted what was intended to represent a grizzly bear, but not being artistic in their work, the Mexicans, with their usual happy faculty on such occasions, called it the "Bandera Colchis," or "Hog Flag." This flag now ornaments the rooms of the Pioneer Society in San Francisco. On the 18th of June, 1846, William B. Ide, a native of New England, who had emigrated to California the year previous, issued a proclamation as commander-in-chief of the fortress of Sonoma. This proclamation declared the purpose to overthrow the existing government, and establish in its place the republican form. General Castro now proposed to attack the feebly manned post at Sonoma, but he was frustrated by a rapid movement of Fremont, who, on the 4th day of July, 1846, called a meeting of Americans at Sonoma; and this assembly, acting under his advice, proclaimed the independence of the country, appointed Fremont, governor and declared war against Mexico. During these proceedings at Sonoma, a flag with one star floated over the headquarters of Fremont at Sutter's Fort. Commodore Montgomery, of the United States sloop-of-war Portsmouth, then lying in San Francisco Bay, had, on the 8th of July, taken possession of Yerba Buena and raised the American flag on the plaza. This, of course, settled the business for all parties. The Mexican flag and the Bear flag were lowered, and in due time, nolens volens, all acquiesced in the flying of the Stars and Stripes.

#### "STARS AND STRIPES" UP.

Commodore Sloat had heard of the commencement of hostilities on the Rio Grande, sailed from Mazatlan for

California, took possession of the country and raised the American flag on his own responsibility. These decisive steps, on the part of Commodore Sloat, were not taken a moment too soon, as on the 14th of July the British man-of-war *Collingwood*, Sir George Seymour commanding, arrived at Monterey, intending, as Sir George acknowledged, "to take possession of that portion of the country." In August, Commodore Sloat relinquished the command of the Pacific squadron to Commodore Stockton, who immediately instituted bold and vigorous measures for the subjugation of the territory. All his available force for land operations was 350 men—sailors and marines. But so rapid and skilful were Stockton's movements, and so efficient was the coöperation of Fremont with his small troop that California was effectually conquered in January, 1847. During all this period the people of the United States were ignorant of what was transpiring in California and vice versa. But the action of Commodore Sloat and Commodore Stockton did, but anticipate the wishes of the government, which had, in June, 1846, despatched General Kearney across the country from Fort Leavenworth at the head of 1,600 men, with orders to conquer California and when conquered to assume the governership of the territory. General Kearney arrived in California via Sam Pasqual with greatly diminished forces in December 1846, a few weeks before active military operations in that region ceased.

In the summer of 1847, the American residents of California, numbering perhaps 2,000, and mostly established near San Francisco Bay, looked forward with hope and confidence to the future. It so happened that at this time one of the leading representatives of American in-

terests in California was John A. Sutter, a Swiss by his parentage; a German by the place of his birth in Baden; an American by residence and naturalization, and a Mexican by subsequent residence, and naturalization in California. In 1839 he settled at the junction of the Sacramento and American rivers, near the site of the present city of Sacramento. His ranche became known as Sutter's Fort. In the summer of 1847, he planned the building of a flour mill, and partly to get lumber for it he planned a saw mill, too. Since there was no good timber in the valley, the saw mill must be in the mountains. The site for it was selected by James W. Marshall, a native of New Jersey, a wheelwright by occupation, industrious, generous, honest but "cranky," full of wild fancies, and defective in some kinds of business sense. The place for his mill was in the small valley of Coloma, 1,500 feet above the level of the sea, and forty-five miles from Sutter's Fort, from which it was accessible by wagon without expense for roadmaking.

Early in 1848, the saw mill was nearly completed. The water had been turned into the race to carry away some of the loose dirt and gravel, and then had been turned off again. On the afternoon of Monday, January 24, Marshall was walking in the tail race, when on its rotten granite bed rock he saw some yellow particles and picked up several of them. The largest were the size of grains of wheat. He thought they were gold and went to the mill, where he told the men that he had found a gold mine. At the time little importance was attached to his statement. It was regarded as a proper subject for ridicule.

Marshall hammered his new metal and found it malleable; he put it into the kitchen fire, and observed that it did not readily melt or become discolored; he compared its

color with gold coin; and the more he examined it the more he was convinced that it was gold. He soon found an opportunity to show his discovery to Sutter, who tested the metal with acid and by careful weighing, and satisfied himself that Marshall's conclusion was correct. In the spring of 1848 San Francisco, a village of 700 inhabitants, had two newspapers, the "Californian" and the "California Star," both weeklies. The first printed mention of the gold discovery was a paragraph in the former, under date of the 15th of March, stating that a gold mine had been found at Sutter's Mill, and that a package of the metal worth \$30 had been received at New Helvetia. Before the middle of June the whole territory resounded with the cry of "gold!" Nearly all the men hurried off to the mines. Workshops, stores, dwellings, vines and even ripe fields of grain were left for a time to take care of themselves. The reports of the discovery, which began to reach the Atlantic States in September, 1849, commanded little credence there before January; but the news of the arrival of large amounts of gold at Mazatlan, Valparaiso, Panama and New York, in the latter part of the winter, put an end to all doubt, and in the spring there were such a rush of peaceful migration as the world had never seen. In 1849, 25,000—according to one authority, 50,000—immigrants went by land, and 23,000 by sea from the region east of the Rocky Mountains, and by sea perhaps 40,000 from other parts of the world. The gold yield of 1848 was estimated at \$5,000,000; that in 1849 at \$23,000,000; that of 1850 at \$50,000,000; that of 1853 at \$65,000,000, the banner production. Since then there has been a decline, but California still yields an enormous annual output. California was admitted to the Union as a free State in 1850. The citizens had organized

a state government with an anti-slavery constitution. Congress debated for ten months on the question of admission. The Missouri Compromise, the whole question of slavery pro and con entered into the controversy. Giants like Clay, Webster and Seward had part in it. Finally the famous Clay Omnibus Bill was passed, in August, 1850, and in its accepted shape required: (1) Utah and New Mexico to be organized into territories, without reference to slavery; (2) California to be admitted as a free State; (3) \$10,000,000 to be paid to Texas for her claim to New Mexico; (4) fugitive slaves to be returned to their masters; and (5) the slave trade to be abolished in the District of Columbia. The compromises were received by the leaders of the two great parties as a final settlement of the vexed questions which had so long troubled Congress and agitated the country, but the storm was only temporarily allayed. In accordance with these measures California became a State of the Union September 9, 1850. The most important feature of this bill, in its bearing upon future struggles and conflicts, was the fugitive slave law. In the midst of the discussion of these topics occurred the death of President Taylor, July 9, 1850, one year and four months after his inauguration.

## THE VIGILANCE COMMITTEE.

The story of the Vigilance Committee is among the most notable of San Francisco's traditions. This association was organized on May 15, 1856. For some time the corruption in the courts of law, the insecurity of the ballot-box in elections, and the infamous character of some of the public officials had been the subject of complaint, not only in San Francisco, but throughout the State of California. It was evident that it would become the duty of the people to protect themselves by reforming the courts, protecting the ballot and controlling the greedy and unprincipled politicians. The latter were represented by a newspaper called the *Sunday Times*, edited by one James P. Casey. The opinion of the better classes of citizens was voiced by the *Evening Bulletin*, whose editor was James King. On the 14th of May, 1856, King was shot by Casey, in the public street, receiving a wound from which he died six days later, and intense excitement of feeling in the city was produced. Casey surrendered himself and was lodged in jail. During the evening of the 14th some of the members of a vigilance committee which had been formed in 1851, and which had then checked a free riot of crime in the suddenly populated and unorganized city, by trying and executing a few desperadoes, came together and determined the organization of another committee for the same purpose. The next day (the 15th) a set of rules and regulations were drawn up which each member was obliged to sign. The committee took spacious rooms, and all citizens of San Francisco having the welfare of the city at heart were invited to join the association. Several thousands enrolled themselves in a few days \* \* \*. The members of the vigi-

lance committee were divided into companies of 100, each company having a captain.

#### VIGILANTS BEGIN THEIR WORK.

Early on Sunday (the 18th) orders were sent to different captains to appear with their companies ready for duty at the headquarters of the committee, in Sacramento Street, at nine o'clock. When all the companies had arrived, they were formed into one body, in all about 2,000 men. Sixty picked men were selected as a guard for the executive committee. At half-past eleven the whole force moved in the direction of the jail. A large number of spectators had collected, but there was no confusion, no noise. They marched through the city to Broadway, and there formed in the open space before the jail \* \* \*. The houses opposite the jail were searched for men and arms secreted there, the committee wishing to prevent any chance of a collision which might lead to bloodshed. A cannon was then brought forward and placed in front of the jail, the muzzle pointed at the door. The jailer was now called upon to deliver Casey to the committee, and complied, being unable to resist. One Charles Cora, who had killed a United States marshal the November previous, was taken from the jail at the same time. The two prisoners were escorted to the quarters of the vigilance committee and there confined under guard. Two days afterwards (May 20th) Mr. King died. Casey and Cora were put on trial before a tribunal which the committee had organized, were condemned to death, and were hanged, with solemnity, on the 22d, from a platform erected in front of the building on Sacramento Street.

## MAKE WAR ON RUFFIANS.

The executive committee, finding that the power they held was perfectly under control, and that there was no danger of any popular excesses, determined to continue their work and rid the country of the gang of ruffians which had for so long a time managed elections in San Francisco and its vicinity. These men were all well known, and were ordered to leave San Francisco. Many went away. Those who had refused to go were arrested and taken to the rooms of the committee, where they were confined until opportunities offered for shipping them out of the country \* \* \*. The governor of California at this time was Mr. J. Neely Johnson \* \* \*. The major-general of the second division of state militia (which included the city and county of San Francisco) was Mr. William T. Sherman (afterwards well known in the world as General Sherman) who had resigned his commission in the United States army and had become a partner in the banking house of Lucas, Turner & Co., in San Francisco \* \* \*. Toward the end of May, Governor Johnson \* \* \* appealed to General Sherman for advice and assistance in putting a stop to the vigilance committee. At this time, General Wool was in command of the United States troops, and Commodore Farragut had charge of the Navy Yard. General Wool was applied to for arms, and Commodore Farragut was asked to station a vessel of war at anchor off San Francisco. Both officers declined to act as requested, having no authority to do so. When Governor Johnson returned to Sacramento, a writ was issued, at his request, by Judge Terry, of the supreme court, commanding the sheriff of San Francisco to bring before him one William Mulligan, who was then in the hands of the vigilance commit-



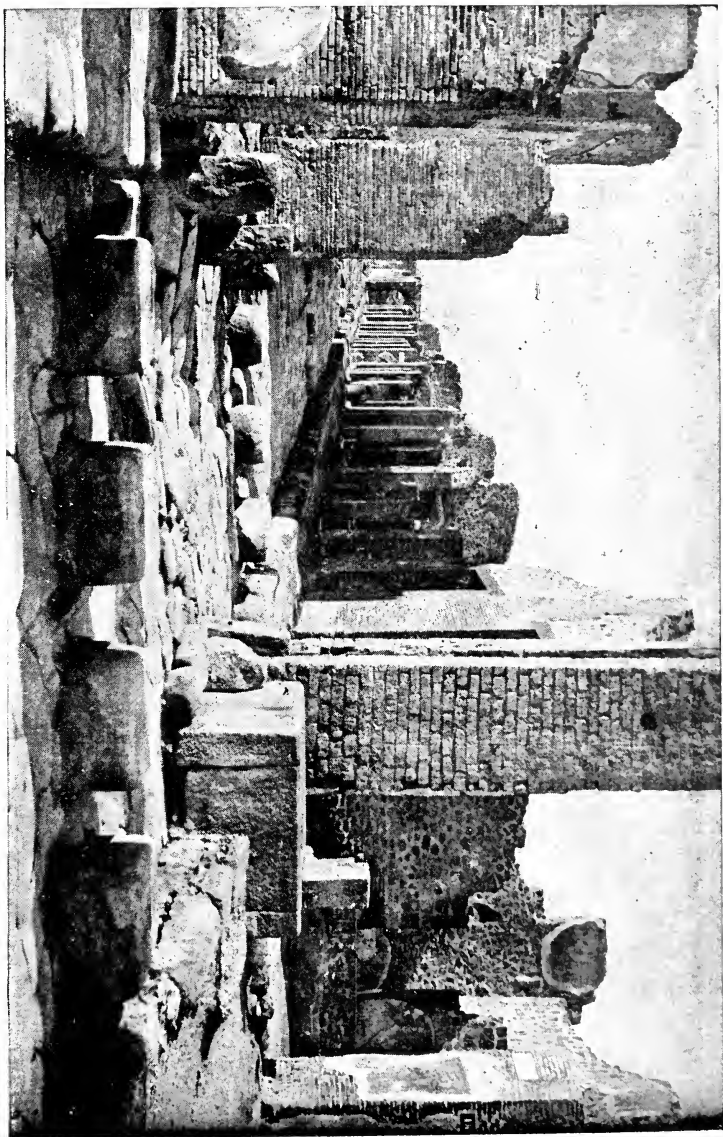
tee. The vigilance committee refused to surrender their prisoner to the sheriff, and General Sherman was ordered to call out the militia of his division to support that officer. At the same time the governor issued a proclamation declaring the city of San Francisco in a state of insurrection. General Sherman found it impossible to arm his militia for service, and resigned the command. The governor sought and obtained arms elsewhere; but the schooner which brought them was seized and the arms possessed by the committee. On attempting to arrest the person who had charge of the schooner, one of the vigilance committee's policemen, named Hopkins, was stabbed by the afterwards notorious Judge Terry, who, with some others, had undertaken to protect the man. The signal for a general meeting under arms was sounded, and in a short time 1,500 men were reported ready for duty. In an hour 4,000 men were under arms and prepared to act against the so-called law-and-order party, who were collected in a force at the different armories. These armories were surrounded.

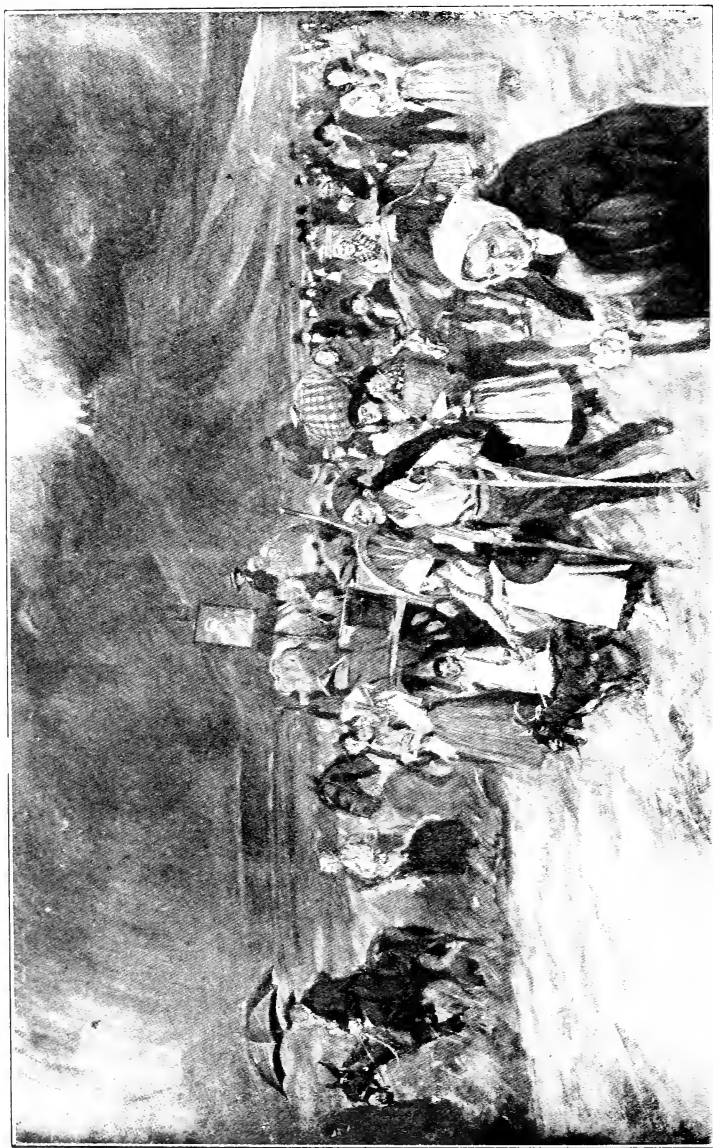
#### VIGILANCE COMMITTEE'S VICTORY.

Judge Terry was demanded and delivered up, and all the arms and ammunition in the armories were removed. In this way was settled the question of power between the vigilance committee, who wished to restore order and were working to establish an honest judiciary and a pure ballot, and their opponents, the law-and-order party, who wished to uphold the dignity of the law by means of a butcher's knife in the hands of a judge of the supreme court. Although the committee were masters in San Francisco, their position was made more precarious by the very fact of their having disarmed their opponents. The attention of the

whole Union was attracted to the state of things in California, and it was rumored that instructions had been sent from Washington to all the United States vessels in the Pacific to proceed at once to San Francisco; and that orders were on the way, placing the United States military force in California at the disposal of Governor Johnson. The committee went on steadily with their work. \* \* \* All the important changes which they had undertaken had been carried out successfully, and they would gladly have given up the responsibility they had assumed had it not been for the case of Judge Terry. \* \* \* At last the physicians announced that Hopkins was out of danger, and on the 7th of August, Judge Terry was released. \* \* \* Having got rid of Judge Terry, the committee prepared to bring their labors to a close, and on the 18th of August the whole association, numbering over 5,000 men, after marching through the principal streets of San Francisco, returned to their headquarters in Sacramento Street, where, after delivering up their arms, they were relieved from duty. In the following November, there was an election of city and county officers. Everything went off quietly. A "people's ticket," bearing the names of thoroughly trustworthy citizens, irrespective of party, was elected by a large majority and thus was begun a reputation for good government, which, ever since, has been maintained.

SCENE IN POMPEII—SHOWING EXCAVATED STREET.





THE TERROR OF VESUVIUS—PEOPLE OF OTTAIANO FLEEING FROM THEIR RUINED VILLAGE.

## VESUVIUS, "THE CHIMNEY OF HELL."

Vesuvius, the most romantic volcano of history, has a bad reputation, and the fact that its present outburst does not equal or surpass in fatalities its memorable eruption of the year A. D. 79 is due almost entirely to an appreciation of its previous destructive character.

From the examination of the ruins of the buried cities of Pompeii and Herculaneum, and from the graphic description of the eruption which destroyed those ancient and populous towns left in the two letters of Pliny the younger, it is evident that the fury of the present activity of "The Chimney of Hell," as the mountain was known in the Dark Ages, is far greater than on the occasion which introduced Vesuvius to history. Contrary to common belief, the loss of life in Pompeii was not over 2000 souls. Yet the city had a population of about 30,000.

As on the occasion of the first recorded eruption of Vesuvius, a large part of the old mountain, known as Monte Somma, was blown away by the terrific explosion, so, during the present season of activity a part of the cone has been removed by the violence of the disruption.

For 2000 years prior to the year 79, when Pompeii was destroyed, the mountain had never shown signs of activity. Although recognized as a volcanic cone, it was believed that Vesuvius was extinct, and farmers, shepherds and vine-growers settled on its fertile grassy slopes, all unconscious that they were sleeping on the sides of a dangerous crater. Even in those days there had been long warnings, and those who had profited by them were saved. Others, who could not or would not, were buried under the

ashes and volcanic mud, where they were found eighteen centuries later by industrious archæologists.

### BETTER PRECAUTIONS NOW.

The means of transportation in the days of Pompeii's greatness were, of course, meagre, compared with the steamships, railroads, trolley roads and automobiles of the present. When the sick or feeble or the loiterers attempted to leave Pompeii they were unable to do so. Those who had neglected the warning perished. How many victims Vesuvius may lay claim to this time is not yet known, but few, if any of them, have been buried, as were those of the year 79. Certainly, eighteen centuries hence the archæologist probably will not find them in the position where they fell.

The fertile slopes of Vesuvius have ever been the sirenlike tempter of the vine-grower. Four crops a year have been the temptation held out to the farmer. That was, he contended, worth a risk, and then the Government Observatory, established in 1841, always gave timely warnings. An examination of the ashes the other day showed that they will prove an active and valuable fertilizer. So, even after the present display of force is over and the old mountain once more becomes peaceful, the farmers will return to the farms on the slopes and chance it again.

The hero of the eruption of 1906 was Professor Matteucci, director of the Royal Observatory, high on the mountain, directly opposite the crater. The professor has given to the world his experiences during the days of the volcano's activity during which he stood by his post.

"I first observed Mount Vesuvius giving unusual signs about a month ago, when the lava began to overflow, taking a southwest direction. This gradually increased as several

small lava streams formed into one great current.

"The real danger began the middle of last week. Then an enormous stream of lava came from the summit, meeting the other streams which burst from the lower strata. It was this that overwhelmed Bosco Trecase. Throughout the lava discharge the volcano was comparatively quiet and without electrical phenomena or explosions. The only ominous sign was the advancing wave of lava and the cinders forming an enormous cloud in the shape of a pine tree over the crater.

#### MOUNTAIN RENT ITS CONE.

"Our really terrible period came at 3 o'clock Sunday morning and lasted until 8 o'clock. The mountain, which hitherto had been silent, suddenly gave out a deafening roar and a great rent was made in its cone. Huge solid rocks were hurled skyward. Some of them fell near the observatory, threatening to crash in the roof, but most of them fell far outside the observatory zone. There was no scoria in this first discharge, but solid bullet-like stones, which cut the roof and damaged the windows."

"At midnight on Saturday," said Professor Matteucci, "I ordered the women and children of the household to be removed. This was just before the rain of huge stones began, and I was then left with Professor Perret, of New York, my American assistant, and two domestics. There was scarcely any eating and all domestic order was abandoned. We snatched a few bites now and then; most of the time I ate right here," and the observer pointed to the remains of a recent meal on the desk in his study.

Throughout Sunday enormous solid blocks of stone rose to a height of 2500 feet from the crater, while ashes and

sand were thrown much higher, but toward Monday the terrible shocks of earthquake gradually diminished.

"One of the worst features of the eruption was the unusual extent of the electrical phenomena, the darkness being broken by vivid flashes of lightning, giving the sky a blood-like color, with short, heavy peals of thunder interspersed. These moments were terrible—very terrible. Yes, it was a veritable hell.

"Observation was extremely difficult under such disturbing conditions. The seismatic instruments were badly affected by the electrical intensity, each explosion being announced by a violent movement of the instrument, which seemed ready to burst into pieces."

"Compared with other great eruptions," continued the observer, "this is one of the most important in the history of Vesuvius. Its effects are less terrible than those of the eruption of the year 79, when Pompeii was buried, but it equals in intensity the great eruptions of 1631 and 1872.

"What results this eruption will yield to science is not yet certain. Eruptions are not exact in science. You cannot count on Vesuvius; each of its eruptions has its characteristics. This one was marked by an abundance of electrical phenomena. I have already collected quantities of cinders and scoria for comparison with similar matter from other eruptions and later I will collect large stones."

#### PROFESSOR PERRET'S ACCOUNT.

Singularly, an American scientist is the only one sharing Professor Matteucci's opportunities of observation. This is Professor Frank A. Perret, of New York.

"I have only been here three months," said Professor Perret. "I came to Italy originally for my health. I had



studied volcano disturbances, and met Professor Matteucci. We became mutually interested, and he honored me by inviting me to share his observations as an honorary assistant. The post of assistant to which I was recently appointed by the University of Naples came at a most fortunate moment, as it permitted my observation of this tremendous disturbance, which is beyond the faintest conception of those outside the immediate terrors of Vesuvius.

"The most terrible moment came Saturday night. I had gone to Bosco Trecase for the purpose of photographing the lava stream that was then deluging that town. I returned to the observatory about midnight. The dynamic force of the main crater increased enormously, and new crater mouths opened in the mountainside within ten minutes of each other. This caused immense havoc. From Naples crowds flocked to Bosco Trecase to witness the sight which was grander there than at any other point.

"At midnight the situation in the observatory was terrible. The ground rocked under it and it was impossible to stand firmly on one's feet. The roaring of the main crater was deafening; the volcano operated like a fountain, its discharge rising and spreading, and then falling over a great area. The electric phenomena were terrifying. The claps of thunder were constant, with a lurid play of lightning. The cause of the phenomena was friction from the ascending particles, generating electricity which displayed itself in incessant lightning and thunder claps.

"No one thought of sleep, but all stood gazing at the scene. At 3 o'clock in the morning the lowest station seemed to be burning, and at 3:30 o'clock the whole cone broke open with a tremendous earthquake shock. Red hot projectiles were precipitated toward Mount Somna and the observatory. That seemed to be the critical moment, and

the brigadier of the carbineers ordered a retreat. We made our way to a small house down the mountain side, but even the rain of stones continued. One of the carbineers was struck on the head and badly cut. After this the intensity of the eruption steadily decreased.

The eruption of 1906, began early in April with earthquake shocks, loud detonations, lava streams and showers of ashes that covered the ground an inch deep. People began flocking from the region on April 5.

The eruption increased in violence. A dense fog, charged with ashes and sulphurous fumes, hung over the land, and condensing vapors came down in floods of rain. The earth was in a constant tremor, and the incessant explosions were compared to a heavy cannonade. On April 6, the main stream of lava, two hundred feet wide, was pouring down the mountain side at the rate of twenty-one feet a minute, the vegetation in its path shriveling in advance from the wave of heat that preceded it. Hot mud, ashes, and black sand mixed with water came down in "caustic rain." The churches were crowded with praying worshippers. At night a pillar of fire a thousand feet high illuminated the land and sea like the flame of a gigantic lighthouse. The military engineers tried to build obstructions to protect the towns in the path of the streams, but the lava rolled over them, destroyed Boscotrecase, a place of ten thousand inhabitants, and drove out the thirty thousand of Torre dell' Annunziata. The observatory on Vesuvius was destroyed, and the director and employees narrowly escaped with their lives. By the 9th a hundred and fifty thousand refugees were gathered at Naples, and the streets of the city were buried in ashes to a depth of more than three feet. A majority of the fatalities seemed to have happened at Ottajano and San Guiseppe, on the northeast

side of the mountain. King Victor Emmanuel and Queen Helena went to Naples, and the King visited the threatened villages at the foot of the mountain. King Edward and Queen Alexandra were advised to stay away. The Italian fleet was ordered to go to Naples to assist the refugees and the captains of several foreign ships offered their vessels as shelter. A partial clearing of the smoke cloud on the afternoon of April 9, revealed the fact that the outline of Vesuvius was altered. The whole cone had been blown away, and it was estimated that the summit was 250 metres lower than it was before the eruption. At that time the extent of the flow of lava was said to have surpassed anything known in two centuries.

#### POMPEII AND HERCULANEUM.

Vesuvius enters history with the eruption which buried the cities of Pompeii and Herculaneum on October 24 of the year 79. So far as is known there is no previous record of an eruption. For sixteen years before the fatal year there were what to modern scientists would be undeniable signs of promised activity in the terrible earthquakes which occurred with fatal frequency for sixteen years before the awful event. A great part of Pompeii was thrown down by a shock in the year 63, and the next year, just after Nero left the building in Naples, where he had been singing, the structure was destroyed by seismic disturbances.

It is not unlikely that these warnings did have their effect upon some of the inhabitants of the cities on the Bay of Naples. According to Dion Cassius, who wrote a century later, Herculaneum and Pompeii were destroyed "while the population were sitting in the theatre." Excavations have not proved this statement, for only a few bodies

have been uncovered in the old theatres of Pompeii, and these are believed to be the remains of gladiators either slain or wounded here. If the theatres were filled there is evidence that the spectators were able to make their escape.

#### DESCRIPTION BY PLINY.

The most famous description of the historic outburst is that left by Pliny the younger, who was an eyewitness, in two letters which he wrote to Tacitus.

"Your request," he wrote in the first epistle, "that I would send you an account of my uncle's death, in order to transmit a more exact relation of it to posterity, deserves my acknowledgments, for if this accident shall be celebrated by your pen the glory of it, I am well assured, will be rendered forever illustrious. And notwithstanding he perished by a misfortune which, as it involved at the same time a most beautiful country in ruins, and destroyed so many populous cities, seems to promise him an everlasting remembrance; notwithstanding he has himself composed many and lasting works, yet I am persuaded the mentioning of him in your immortal writings will greatly contribute to render his name immortal.

"It is with extreme willingness, therefore, that I execute your commands, and should indeed have demanded the task if you had not enjoined it. He was at that time with the fleet under his command at Misenum. On the 24th of August, about 1 in the afternoon, my mother desired him to observe a cloud which appeared of a very unusual size and shape. He had just taken a turn in the sun, and, after bathing himself in cold water and making a light luncheon, gone back to his books. He immediately arose and went out upon a rising ground from whence he might get a better sight of this very uncommon appearance. A



THE ERUPTION OF VESUVIUS—PANIC STRICKEN REFUGEES  
MAKING THEIR WAY TO PLACES OF SAFETY.



**RUINS OF THE CITY OF ST. PIERRE MARTINIQUE AFTER THE  
ERUPTION OF MT. PELEE.**

cloud, from which mountain was uncertain at this distance (but it was found afterward to come from Mount Vesuvius), was ascending, the appearance of which I cannot give you a more exact description of than by likening it to that of a pine tree, for it shot up to a great height in the form of a tall trunk, which spread itself out at the top into a sort of branches, occasioned, I imagine, either by a sudden gust of air that impelled it, the force of which decreased as it advanced upward, or the cloud itself being pressed back again by its own weight, expanded in the manner I have mentioned; it appeared sometimes bright and sometimes dark and spotted, according as it was either more or less impregnated with earth and cinders.

#### DARKER THAN THICKEST NIGHT.

“Meanwhile broad flames shone out in several places from Mount Vesuvius, which the darkness of the night contributed to render still brighter and clearer. But my uncle, in order to soothe the apprehensions of his friend, Pomponianus, assured him it was only the burning of the villages, which the country people had abandoned to the flames. After this he retired to rest. The court which led to his apartment being now almost filled with stones and ashes, if he had continued there any time longer it would have been impossible for him to have made his way out. So he was awakened and got up, and went to Pomponianus and the rest of the company, who were feeling too anxious to think of going to bed.

“They went out then, having pillows tied upon their heads with napkins, and this was their whole defense against the storm of stones that fell round them.

“It was now day everywhere else, but there a deeper

darkness prevailed than in the thickest night, which, however, was in some degree alleviated by torches and other lights of various kinds. They thought proper to go further down upon the shore to see if they might safely put to sea, but found the waves still running extremely high and boisterous.

“There my uncle, laying himself down upon a sail cloth which was spread for him, called twice for some cold water, which he drank, when immediately the flames, preceded by a strong whiff of sulphur, dispersed the rest of the party and obliged him to rise. He raised himself up with the assistance of two of his servants, and instantly fell down dead, suffocated, as I conjecture by some gross and noxious vapor, having always had a weak throat, which was often inflamed. As soon as it was light again, which was not till the third day after this melancholy accident, his body was found entire, and without any marks of violence upon it, in the dress in which he fell, and looking more like a man asleep than dead.”

#### DANGEROUS AND DREADFUL SCENE.

In his second letter Pliny gives further particulars:

“There,” he wrote, “had been noticed for many days before a trembling of the earth, which did not alarm us much, as this is quite an ordinary occurrence in Campania, but it was so particularly violent that night that it not only shook, but actually overturned, as it would seem, everything about us. My mother rushed into my chamber, where she found me rising, in order to awaken her. We sat down in the open court of the house, which occupied a small space between the buildings and the sea. As I was at that time but 18 years of age I know not whether I should



call my behavior in this dangerous juncture courage or folly; but I took up Livy and amused myself with turning over that author, and even making extracts from him, as if I had been perfectly at my leisure. Though it was now morning the light was still exceedingly faint and doubtful; the buildings all around us tottered, and though we stood upon open ground, yet as the place was narrow and confined, there was no remaining without imminent danger. We, therefore, resolved to quit the town.

“A panic-stricken crowd followed us, and (as to a mind distracted with terror every suggestion seemed more prudent than its own) pressed on us in dense array to drive us forward as we came out. Being at a convenient distance from the houses we stood still in the midst of a most dangerous and dreadful scene. The chariots, which we had ordered to be drawn out, were so agitated backward and forward, though upon the most level ground, that we could not keep them steady, even by supporting them with large stones. The sea seemed to roll back upon itself, and to be driven from its banks by the convulsive motion of the earth. It is certain at least the shore was considerably enlarged, and several sea animals were left upon it. On the other side a black and dreadful cloud, broken with rapid, zigzag flashes, revealed behind it variously shaped masses of flame. These last were like sheet lightning, but much larger.

“Soon afterward the cloud began to descend and cover the sea. It had already surrounded and concealed the Island of Capri and the promontory of Misenum.

“My mother now besought, urged, even commanded me to make my escape, at any rate, which, as I was young, I might easily do; as for herself, she said her age and corpulency rendered all attempts of that sort impossible; however, she would willingly meet death if she could have the

satisfaction of seeing that she was not the occasion of mine. But I absolutely refused to leave her, and taking her by the hand, compelled her to go with me. She complied with great reluctance, and not without many reproaches to herself for retarding my flight.

“The ashes now began to fall upon us, though in no great quantity. I looked back. A dense, dark mist seemed to be following us, spreading itself over the country like a cloud. ‘Let us turn out of the high road,’ I said, ‘while we can still see, for fear that, should we fall in the road, we should be pressed to death in the dark by the crowds that are following us.’ We had scarcely sat down when night came upon us, not such as we have when the sky is cloudy, or when there is no moon, but that of a room when it is shut up and all the lights put out.

#### A GRAPHIC WORD-PICTURE.

“You might hear the shrieks of women, the screams of children and the shouts of men; some calling for their children, others for their parents, others for their husbands, and seeking to recognize each other by the voices that replied; one lamenting his own fate; another that of his family; some wishing to die from the very fear of dying; some lifting their hands to the gods, but the greater part convinced that there were now no gods at all, and that the final endless night, of which we have heard, had come upon the world. Among these there were some who augmented the real terrors by others imaginary or wilfully invented. I remember some who declared that one part of Misenum had fallen, that another was on fire; it was false, but they found people to believe them. It now grew rather lighter, which we imagined to be rather the forerunner of an approaching

burst of flames (as in truth it was) than the return of day. However, the fire fell at a distance from us; then again we were immersed in thick darkness, and a heavy shower of ashes rained upon us, which we were obliged every now and then to stand up to shake off, otherwise we should have been crushed and buried in the heap.

“At last this dreadful darkness was dissipated by degrees, like a cloud of smoke; the real day returned, and even the sun shone out, though with a lurid light, as when an eclipse is coming on. Every object that presented itself to our eyes (which were extremely weakened) seemed changed, being covered deep with ashes as if with snow.”

#### ERUPTIONS OF VESUVIUS.

Vesuvius is inseparably linked with the destruction of Pompeii, so graphically described by the younger Pliny. Although the burning mountain before that time always had been regarded as an extinct crater, the volcano ceased its activity after that awful exhibition of its power, and for 124 years remained dormant. The principal eruptions of Vesuvius have been as follows: A. D. 79, 203, 472, 512, 685, 993, 1036, 1049, 1138, 1306, 1631, 1779, 1793, 1822, 1861, 1872, 1906. The eruptions of 1631, 1872 and the present month are the most destructive since the ashes of the volcano sealed up the two ancient cities at its foot. That of 1631 killed about 4,000 persons; in 1872 about 60 perished; and it is estimated that thus far almost 500 persons have fallen victims to the present fury of Vesuvius, while the property loss, at present only to be estimated, may reach \$20,000,000.

Pompeii was buried under materials from twenty to

twenty-five feet deep. The greater part of this covering is composed of volcanic ash. Several strata of volcanic material have been found by excavators, showing that more than once the lava, mud and ashes from the crater have fallen over the same place. Five-sixths of the depth of the materials has been found to consist of pumice stone of an irregular shape, from the size of a pea to two or three inches in diameter. Upon the authority of some scientists who have examined these materials it is said that fire was no element in the destruction of Pompeii.

#### **POMPEII AN ARTISTIC QUARRY.**

Soon after the destruction of the ancient city searches were made, either by those who escaped or by looters, and many articles of value removed. There is evidence tending to show that these researches were continued over a long period. It is also known that the Emperor Alexander Severus made Pompeii a sort of artistic quarry, from which he drew a great quantity of marbles, columns and beautiful statues which he employed in adorning edifices he constructed in Rome. The furniture once in the Basilica and the columns of the porticos of Eumachia were missing when the ruins were uncovered, and it has reasonably been suggested that they were removed, probably by the imperial looter.

#### **PROGRESS IN RECENT YEARS.**

Charles III, the first Bourbon King of Naples, had a palace erected at Portici in 1748, and more remains of an ancient town were brought to light. A Spanish officer of Engineers was employed to examine the subterranean

canal, and he was led to conjecture that a buried city was to be found on its lines. Excavations were then commenced, and have been continued, with intermissions, down to the present time. In 1755 the Accademia Ercolanese was instituted for the investigation of the antiquities discovered, and under their auspices was published in nine volumes the "Pitture d'Ercalano." The publication caused a sensation among the learned, and worldwide interest has since been felt in the gigantic work of uncovering the ruined cities. Since 1828 the work of research has gone forward very energetically, until now it is almost possible to gain a fairly thorough history of the manners and customs of Pompeii under the Roman rule.

#### GREAT THEATRES OF POMPEII.

Besides the temples which surround the forum, the remains of four others have been discovered, three of which are situated in the immediate neighborhood of the theatre. Among the most conspicuous buildings are the theatres, of which there were two, placed, as was usual in Greek towns, in close juxtaposition with one another. The largest of these, which was partly excavated in the side of the hill, was a building of considerable magnificence, being in great part cased with marble, and furnished with seats of the same material, which have, however, been almost wholly removed. Its internal construction and arrangements resemble those of the Roman theatres in general, though with some peculiarities that show Greek influence, and we learn from an inscription that it was erected in Roman times by two members of the same family, M. Holconius Rufus and M. Holconius Celer, both of whom held important municipal offices at Pompeii during the reign of

Augustus. The smaller theatre, which was erected, as we learn from an inscription, by two magistrates specially appointed for the purpose by the decurions of the city, was of older date than the large one, and appears to have been constructed about the same time as the amphitheatre soon after the establishment of the Roman colony under Sulla. The smaller theatre is computed to have been capable of containing fifteen hundred spectators while the larger could accommodate five thousand persons.

#### THE CATTLE MARKET.

Adjoining the amphitheatre was found a large open space, nearly square in form which has been supposed to be a forum boarium or cattle market, but, no buildings of interest being discovered around it, the excavation was filled up again, and this part of the city has not since been examined. Among the more important public buildings in Pompeii were the *thermae*, or public baths, an institution that always held a prominent position in every Roman or Graeco-Roman town. Three different establishments of this character have been discovered, of which the first, excavated in 1824, was for a long time the only one known. Great as is the interest attached to the various public buildings of Pompeii, and valuable as is the light that they have in some instances thrown upon similar edifices in other ruined cities, far more curious and interesting is the insight afforded us by the numerous private houses and shops into the ordinary life and habits of the population of the ancient town.

#### THE ARCHITECTURE OF POMPEII.

The architecture of Pompeii must be regarded as presenting in general a transitional character from the pure

Greek style to that of the Roman Empire. All the three orders of Greek architecture—the Doric, Ionic and Corinthian—are found freely employed in the various edifices of the city, but rarely in strict accordance with the rules of art in their proportions and details, while the private houses naturally exhibit still more deviation and irregularity. The architecture of Pompeii suffers also from the inferior quality of the materials generally employed. No good building stone was at hand; and the public as well as private edifices were constructed either of volcanic tuff, or brick; or the irregular masonry known to the Romans as *opus incertum*. In the private houses, even, the columns are mostly of brick covered merely with a coat of stucco. In a few instances only do we find them making use of a kind of travertine, found in the valley of the Sarno, which, though inferior to the similiar material so largely employed at Rome, was better adapted than the ordinary tuff for purposes where great solidity was required. The portion of the portico surrounding the forum which was in the process of rebuilding at the time when the city was destroyed was constructed of this material, while the earlier portions, as well as the principal temples that adjoined it, were composed in the ordinary manner of volcanic tuff.

## GREAT EARTHQUAKES OF HISTORY

Accounts of earthquakes are to be found scattered through the writings of many ancient authors, but they are, for the most part, of little value to the seismologist. There is a natural tendency to exaggeration in describing such phenomena, sometimes, indeed, to the extent of importing a supernatural element into the description. It is true that attempts were made by some ancient writers on natural philosophy, to offer a rational explanation of earthquake phenomena, but the hypotheses which their explanations involved are, as a rule, too fanciful to be worth reproducing at the present day. It is, therefore, unnecessary to dwell upon the references to seismic phenomena which have come down to us in the writings of such historians and philosophers as Thucydides, Aristotle, and Strabo, Seneca, Livy, and Pliny. Nor is much to be gleaned from the pages of mediæval and later writers on earthquakes, of whom the most notable are Fromondi (1527), Maggio (1571), and Travagini (1679).

Even at the present day, after all that has been written on the subject, but little is really known as to the origin of earthquakes. Probably several distinct causes should be recognized, for it is hardly to be supposed that all subterranean disturbances, differing, as they do, so widely in intensity and in duration, should be referable to one common mechanism. Any great concussion, even upon the surface, is competent to produce tremors which may be regarded as diminutive earthquakes; thus the great landslip at the Rossberg, in Switzerland, in 1806, was accompanied by a local quaking of the ground. Volgar and Mohr have suggested that some of the small earthquakes which have been felt in Germany



may be referred to the falling-in of the roof of enormous subterranean cavities formed by the long-continued solvent action of water on deposits of rock-salt, limestone, and gypsum. Such causes, however, can have given rise to only very petty shocks, and must be quite subordinate to subterranean disturbances of a more general character.

The late Mr. Poulett Scrope was led to refer most earthquakes to "the snap and jar occasioned by the sudden and violent rupture of solid rock-masses, and, perhaps, the instantaneous injection into them of intumescent molten matter from beneath." He believed that the rupture of the rocks was due to expansion of deeply seated masses of mineral matter, consequent upon either increased temperature or diminished temperature. It is argued, however, by Mr. Mallet, on mechanical principles, that such fractures could produce only very weak impulses; but he believes that some earthquakes, especially those marked by long-continued tremors, may be due to the movement and crush-in; of rock masses by tangential pressures produced by secular cooling of the earth. Steam has always been a favorite agent with seismologists, since it is clearly competent to produce great effects by its sudden generation or by its sudden condensation. It has been suggested that water, finding its way through fissures in the earth's crust, might reach highly-heated rocks and remain quietly, in the spheroidal condition until a local reduction of temperature suddenly caused it to flash into steam. After all, the origin of earthquakes is probably to be regarded as part only of a much wider question. Whatever causes are competent to produce volcanic action are, in all likelihood, equally competent to produce the ordinary manifestations of seismic energy. A reaction is clearly traceable between the geographical distribution of volcanoes and the chief earthquake-areas;

and although it is not for a moment to be supposed that the volcano and the earthquake stand to each other in relation of cause and effect, it is nevertheless highly probable that they represent merely different expressions of the same subterranean forces.

#### DESTRUCTION OF SPARTA, B. C. 464.

History records many earthquakes of tremendous force and destructiveness. In B. C. 464, the whole of Laconia was shaken. The story is told by Thirlwall in his "History of Greece." The earthquake opened great chasms in the ground and rolled down huge masses from the highest peaks of Taygetus; Sparta, itself, became a heap of ruins, in which not more than five houses are said to have been left standing. More than 20,000 persons were believed to have been destroyed by the shock and the flower of the Spartan youth was overwhelmed by the fall of the buildings in which they were exercising themselves.

#### THE LISBON TRAGEDY.

The Lisbon earthquake cost 20,000 lives and great portions of the city were engulfed. Grace Aguilar in her novel "The Escape" gives a graphic pen picture of the tragedy, which occurred on November 1, 1755. Alvar Rodriguez, a rich Jew, whose wealth has excited the cupidity of officials of the Spanish Inquisition and his young bride, Almah Diaz, are on the point of being put to death. The earthquake is their salvation. The incident is thus described:

The executioners hurried forward, the brands were

applied to the turf of the piles, the flames blazed up beneath their hand—when at that moment there came a shock as if the earth were cloven asunder, the heavens rent in twain. A crash so loud, so fearful, so appalling, as if the whole of Lisbon had been shivered to its foundations, and a shriek, or rather thousands and thousands of human voices, blended in one wild, piercing cry of agony and terror, seeming to burst from every quarter at the selfsame instant, and fraught with universal woe. The buildings around shook, as impelled by a mighty whirlwind, though no such sound was heard.

The earth heaved, yawned, closed, and rocked again, as the billows of the ocean were lashed to fury. It was a moment of untold horror. The crowd assembled to witness the martyrs' death, wildly shrieking, fled on every side. Scattered to the heaving ground, the blazing piles lay powerless to injure; their bonds were shivered, their guards were fled. . . One bound brought Alvar to his wife and he clasped her in his arms.

#### FEARFUL HAVOC OF SHOCK.

Every street and square, and avenue was choked with shattered ruins, rent from top to bottom; houses, convents, and churches presented the most fearful aspect of ruin; while every second minute a new impetus seemed to be given to the convulsed earth, causing those that remained still perfect to rock and rend. Huge stones, falling from every crack, were crushing the miserable fugitives as they rushed on, seeking safety they knew not where. . . None dared ask the fate of friends—none dared ask, "Who lives?" in that one scene of universal death.

On, on sped Alvar and his precious burden! On, over the piles of ruins; on, unhurt amidst the showers of stones, which hurled in the air as easily as a ball cast from an infant's hand, fell back again laden with a hundred deaths; on, amid the rocking and yawning earth, beholding thousands swallowed up, crushed and maimed, worse than death itself, for they were left to a lingering torture—to die a thousand deaths in anticipating one; on over the disfigured heaps of dead, and the unrecognized masses of what had once been magnificent and gorgeous buildings.

His eye was well nigh blinded with the shaking and tottering movement of all things animate and inanimate before him; and his path was obscured by the sudden and awful darkness, which had changed that bright, glowing hue of the sunny sky into a pall of dense and terrible blackness, becoming thicker and denser with every succeeding minute, till darkness which might be felt, enveloped that city as with the grim shadow of death.

His ear was deafened by the appalling sounds of human agony and nature's wrath; for now sounds as of a hundred waterspouts, the dull, continued roar of subterranean thunder, becoming at times loud as the discharge of a thousand cannons; at others resembling the sharp grating sound of hundreds and hundreds of chariots driven full speed over the stones; and this, mingled with the piercing shrieks of women, the hoarser cries and shouts of men, and the deep, terrible groans of mental agony and the shriller screams of instantaneous deaths, had usurped the place of the previous awful stillness, till every sense of those who yet survived seemed distorted and maddened,

## THE GREAT RUSH OF THE SEA.

A shock, violent, destructive, convulsive, flung them prostrate.

A new and terrible cry added to the universal horror. "The sea! The sea!"

Alvar sprang to his feet, and, clasped in each other's arms, he and Almah gazed beneath. Not a breath of wind moved, yet the river tossed and heaved as impelled by a mighty storm—and on it came, roaring, foaming, tumbling, as if every bound were loosed; on, on over the land to the very heart of the devoted city, sweeping off hundreds in its course and retiring with such velocity and so far beyond its natural banks that vessels were left dry which had five minutes before ridden in water seven fathoms deep.

Again and again this phenomenon took place; the vessels in the river at the same instant whirled round and round with frightful rapidity, and smaller boats dashed upwards, falling back to disappear beneath the booming waters.

As if chained to the spot by the horror, Alvar and his wife yet gazed; their glances fixed on the new marble quay, where thousands and thousands of the fugitives had congregated; fixed as if unconsciously foreboding what was to befall.

Again the tide rushed in—on, on, over the massive ruins, heaving, raging, swelling, as a living thing; and at the same instant the quay and its vast burden of humanity sunk within an abyss of boiling waters, into which the innumerable boats around were alike impelled, leaving not a trace, even when the angry waters return to their channel, suddenly as they had left it, to mark what had been.

## A CITY PERISHED AND PROSTRATE.

Terrible it was. From three several parts of the ruined city huge fires suddenly blazed up, hissing, crackling, ascending as clear columns of liquid flame up against the pitchy darkness, infusing it with tenfold horror—spreading on every side—consuming all wood and wall which the earth and water had left unscathed; wreathing its serpent like folds in and out the ruins; fascinating the eye with admiration, yet bidding the blood chill and the flesh creep.

Fresh shouts and cries had marked its rise and progress, but, aghast and stupefied, those who yet survived made no effort to check its way, and on every side it spread, forming lanes and squares of glowing red, flinging its lurid glare so vividly around that even those on the distant heights could see to read by it; and fearful was the scene that awful light revealed.

Now, for the first time, could Alvar trace the full extent of destruction which had befallen. That glorious city which, a few brief hours previous, lay reposing in gorgeous sunlight—mighty in its palaces and towers—in its churches, convents, theatres, magazines, and dwellings—rich in its numberless artisans and stores—lay perished and prostrate as the grim specter of long ages past, save that the fearful groups yet passing to and fro, or huddled in kneeling or standing masses, some bathed in the red glare of the increasing fires, others black and shapeless—save when sudden fire flashed on them, disclosing what they were—revealed a strange and horrible present amid what seemed the shadows of a fearful past.

**LIMA AND CALLAO—1746.**

South America, along its western side, has been a region of many earthquakes. The Cordillera, a coast range, is a great terrestrial billow, bristling with volcanoes, active and extinct, and in almost every part showing striking evidence of volcanic agencies. It is throughout volcanic, as if overlying some vast fissure of the earth's crust, reaching nearly in a right line from north to south. But the two great centers of pronounced and frequently recurring disturbance coincide nearly with the sites of the capitals of the two republics, Ecuador and Peru, namely Quito and Lima.

The first earthquake recorded in this region preceded the Lisbon disaster by a few years. It occurred in the year 1746, on the 28th day of October, and was felt over a vast expanse of country. During the night at half past 10 o'clock, the earth was suddenly convulsed, and as a contemporary in Lima wrote, "at one and the same time came the noise, the shock and the ruin," so that in a space of four minutes, during which the earthquake lasted, the destruction was complete, and Lima was reduced to a heap of ruins.

Of upward of 3000 houses but twenty-one remained standing. There were seventy-one churches, great and small, all of which were destroyed. Still, owing in part to its occurrence early in the evening, before the people were in their beds, only 1141 persons were killed out of a population of perhaps from 40,000 to 50,000. Seventy of these were patients in the Hospital of St. Anne.

**PERU AND ECUADOR—1863.**

Many other earthquakes, more or less disastrous, are

## SAN FRANCISCO'S GREAT DISASTER.

recorded in Peru and Ecuador. But it was in 1868 that there took place what are known as "the great South American earthquakes," which for their extent, violence and widespread devastation may be regarded as the most terrible seismic disturbances on record. For months, the catastrophe was portended by hurricanes, tremors and volcanic eruptions in almost every quarter of the globe.

The great shocks in the South American continent took place on August 13 and 16. They were felt, more or less severely, over an extent, from north to south, of more than sixty degrees of latitude, all the way from the Isthmus to Cape Horn. Yet their lateral action seems to have been checked, on the east certainly, by the chain of the Cordillera, and effectually stopped by the Andes., So terrific were the shocks in Peru and beneath the seas adjoining that great tidal waves broke on the shores of the Pacific islands and on those of distant New Zealand, Japan and California.

### KRAKATOA—1883.

Until the year 1883, few people of the world generally had ever heard of the little Island of Krakatoa, lying in the Sunda Straits, midway between Java and Sumatra. Beneath the big mountain, an extinct volcano, was the thriving little seaport of Anjer, crowded with yellow-skinned Malays. Back of the town were scores of small villages.

Earthquakes and volcanic eruptions are always closely associated, and it was earthquake shocks that, in 1883, gave the first warning of disturbance within the cone of Krakatoa. These were felt over a wide area, throughout all the adjacent islands. Then came the signs of volcanic activity. But at first the eruption did not threaten to be of any serious type. In fact, the good people of Batavia, a hundred miles away, so far from being terrified at what was in progress in Krakatoa, thought the display was such an attraction that they chartered a steamer and went forth for a pleasant picnic on the island.



But as the summer advanced, the vigor of Krakatoa steadily increased, the noises became more and more vehement, and at last the thunders of the recurring explosions caused consternation over a wide region. There were other symptoms of the approaching catastrophe. With each successive convulsion, a quantity of fine dust was projected aloft into the clouds. There was no wind to carry this dust away, and, as the atmosphere thus became heavily charged with the suspended particles, a pall of darkness enveloped Krakatoa, and hung over the adjoining seas and islands. For a hundred miles around the darkness of midnight prevailed at midday. Then came the final tragedy.

On the night of Sunday, August 26, there occurred an explosion that shook the world for hundreds of miles around. There followed a rain of grey, soft ashes. Then at the hour when there should have been dawn, but everything was darkness, a great wave leapt from the sea and dashed itself on the island. The fleeing natives flung themselves upon the hills, with the water hard behind them. But the surging waters caught them, and drew them back. When the resurgence came, the land was stripped clean of living timber and of living beings. In this disaster over fifty thousand people perished, and few of the bodies were ever recovered.

#### JAPAN—1888.

Japan has been the scene of many disastrous earthquakes. On the morning of July, 15, 1888, in the province of Tuckushima, about one hundred and sixty-five miles north of Tokio, a low rumbling was heard like the sound of distant thunder. Then the earth was heaved up and began to tremble violently, the ground undulating like water shaking in a bowl. From the peak of Bandaisun The green earth below was speedily covered by a winding sheet of volcanic mud, heavy rocks, hot water, burning sulphur, red-hot sand, and glowing ashes. Under this mass,

varying in thickness from seven to twenty feet, were hidden six hundred men, women and children, dead at once or writhing in their last agonies. Among those that perished there shot up into the air a huge mass of red volcanic mud, mixed with fire and rocks, smoke and sulphur fumes. were no fewer than 150 visitors to the medicinal hot springs that had long made the place famous.

#### GUATEMALA—1902.

On April 18, 1902, by an earthquake shock that lasted only 90 seconds, the entire city of Quezaltenayo, in Guatemala, Central America, was crumbled into ruins, thousands of its inhabitants were killed and other thousands maimed and crippled. The population of the city was mainly Indians, of a high grade of civilization. The disaster was preceded by a great storm. The thunder roared and crashed from peak to peak, continuous flashes of lightning played over the doomed city, the electric lighting plant collapsed, and the blackness of the fearsome night was broken only by the electricity of heaven. Then came the short, sharp upheaval, the crash and ripping of falling buildings, the screams of the wounded and the dying, and thereafter terror stricken crowds groping and staggering through the dark, trampling each other to death in the frenzy of their fear. The survivors sought safety on the open plain outside the town.

#### MARTINIQUE—1902.

The Guatemalan earthquake was the precursor of the still more disastrous catastrophe on the island of Martinique a few weeks later. On the 8th of May Mount Pelee suddenly poured forth flames, ashes and deadly gases, which swept down the cañon with a tremendous velocity toward the Caribbean Sea, and in less than three minutes destroyed the beautiful city of Saint Pierre, together with more than forty thousand human beings. Not a dozen escaped from the place to tell the tale.









