

same numbers when the instrument is focused upon the same object. An index of the whole city having been made, it is easy to determine the exact spot at which the telescope is pointed. The apparatus must necessarily be placed in an elevated position commanding an unobstructed view of the area to be watched, and in this case the tower of St. Stephen's Cathedral, which is over 500 feet high, is used, giving—with the favorable atmospheric conditions that prevail—complete oversight of the entire city. When a fire is seen, a few seconds suffice for pointing the telescope toward it and looking up on the index the numbers read from the scales. The central station is then signaled, and it is often possible to give the exact house and number, while the usual box signals indicate only a box that may be several blocks from the fire.

In sextant observations on ship-board, it is often difficult to make measurements from the horizon, and various unsatisfactory attempts have been made to substitute some mechanical or other means of determining the horizontal or vertical. A novel plan—claimed to have been put to practical use on land and sea—has been suggested in France by Rear-Admiral Fleuriel. It consists in adding to the ordinary sextant a horizontal gyroscope, which is placed in front of the telescope and behind the small mirror, and contains in its upper part two small plans, convex lenses, placed at a distance apart equal to their focal length. On the plane faces of the lenses are engraved two lines parallel to the equator of the gyroscope. The gyroscope is rotated 80 to 100 turns a second, and the horizontal is obtained by observing the position of the figures described by these lines as the lenses revolved.

A singular effect of a bee sting is related by an English astronomer. The sting was not painful, but in about fifteen minutes the face of the victim, a lady, became violently flushed, and blains or white blisters appeared all over her body, arms and legs; and then, more curiously still, she developed a sharp attack of asthma! This yielded to home remedies, and the blisters turned from white to red, disappearing in a few hours.

The diamonds of the Kimberly diamond "pipes," in the theory of Prof. William Crookes, have crystallized out of molten iron containing dissolved carbon and at sufficient depth in the earth to give great pressure. Water reaching the iron, generated gas that bored out the pipes, and at the subsidence of the great rush, these were filled with a water-borne magna in which rocks, minerals, iron oxide, shale, petroleum and diamonds are churned together in a veritable witch' caldron. It may be, Prof. Crookes concludes, that each of these volcanic pipes is the vent for its own special laboratory—a laboratory buried at vastly greater depths than we have reached or are likely to reach—where the temperature is comparable with that of the electric furnace; where the pressure is fiercer than in our puny laboratories, and the melting point higher; where no oxygen is present, and where masses of carbon-saturated iron have taken centuries, perhaps thousands of years, to cool to the solidifying point. Such being the conditions, the wonder is, not that diamonds are found as big as one's fist, but that they are not found as big as one's head.

A strongly phosphorescent strontium sulphide has been investigated by Prof. Morelo, of Madrid. The pure compound shows no phosphorescence, the presence of a small quantity of alkali seeming to be necessary, and a

trace of subnitrate of bismuth an advantage. After cooling from a high temperature very slowly, the substance is made strongly phosphorescent by even a very little light, which may be restored by long heating with starch.

The longevity of astronomers has often been noted. A French compiler finds that Fontenelle lived to 100, Caroline Herschel to 98, Cassini to 97, Sir Edward Sabine to 94, Moirans to 93, Santini and Sharpe to 91, Yates, Airy, Humboldt, Robison and Long to 90. The long list of those who lived to 80 includes Halley, Newton, Herschel, Kant and Roger Bacon.

The late idea in international congresses is one to discuss fire prevention soon to be held in Paris.

OUR SAN FRANCISCO LETTER

San Francisco, Cal., Aug. 25, 1897.

If the predictions of our venerable mayor are entitled to any consideration, San Francisco is on the threshold of an era of prosperity, though it must be admitted that his honor has included several ifs and provisions in his prophecy, any one of which might change the whole aspect. So should the good times fail to materialize, the honorable gentleman will not awake from his dreams to find himself committed.

His feelings of approaching prosperity does not seem to be general, except among the wealthy and independent classes, and the prospects are anything but encouraging to a casual observer, for vacant buildings, "To Let" signs by the thousands, a depleted city treasury, and a threatened increased taxation are poor indications for such promising results as Mayor Phelan foreshadows.

The life of a United States senator is anything but a continued round of pleasure. Especially is it so with Senator Perkins, who recently returned home from the capital, to find himself thrown upon the mercy of a pack of disappointed office-seekers, who lay the blame of their shattered hopes at his door. It is not sufficient to be accused of duplicity and other unpleasant forms of trickery, but he must bear the double burden of listening to the grievances of his accusers; and all this comes to him at a time when he is seeking rest and quiet at home after months of hard labor in the Senate.

The mining fever seems to have been laid aside for the present though it promises to revive again with the melting snow next spring. The dollar mark in the United States has caused the greatest flurry of excitement among speculators and producers in California. The booming prices seem to have brightened up the farmers, given new life to the operators and added fresh spirit to speculation. It has also had its evil effects and left the traces of severe nervous strain on many an anxious face. Men have awakened to find themselves suddenly sick through their speculations and many a shoestring has developed into a handsome fortune. These men are accredited shrewd operators, while others, less fortunate, have helplessly watched the hard accumulations of years fade away with the climbing prices. For these unfortunates men give a knowing wink and pass on lightly for the shearing of a richer "lamb."

On the produce exchange in this city the wildest excitement prevailed during this advance in prices. To an uninitiated spectator it looked very much like a riot or the mad struggle of a football team at a championship contest, so noisy and reckless did everything appear. As each new point was recorded the excitement seemed to increase and found expression in such uproarious exclamations as greets the

returns of a presidential election. At first glance it looked as though Bedlam had broken loose within the pit. Men seemed bereft of all reason and rushed madly to and fro waving their notebooks above their heads, pushing and shoving, regardless of hats or heads, feelings or feet. The rich and the poor alike mingled together, all bent upon seeing who could make the most noise, as though they were undergoing great bodily suffering. While this increase in price means much to the speculator, it is better than a Klondike for the producer.

The Mechanics' Fair opened its annual exhibition on the 17th of the present month with "Pure Food" as a special feature. It is the same old stereotyped display of former years, hardly a new attraction being noticeable. All the leading business concerns and industrial enterprises are represented by the test their lines afford. The Pure Food promoters are distributing samples gratis, and consequently have a large patronage. The booths have very much the appearance of free soup houses of harder times.

Impressive ceremonies were held last week on the site of the proposed new mission high school, the occasion being the laying of the corner stone. Of course the same old battle-scarred speeches were rehearsed by the mayor and other prominent gentlemen, and everybody in the neighborhood turned out, not so much, it seemed, for the sake of the services as to swell the crowd and be in one another's way.

The inhabitants of the elevated districts of San Francisco were treated to a grand and beautiful sight last Friday evening. The heavens were lit up and displayed all the beauty and grandeur of the aurora borealis. The cause happened to be a forest fire that for a time threatened to destroy the whole of Maria county, just across the bay. It was soon under control, though not before it had destroyed much valuable property; still it gave to the people of the surrounding country a sight they will long remember.

The prosecution in the case of Theodore Figel, arraigned for the murder of Isaac Hoffman, has closed its side of the case after six weeks steady attendance, and the defense has taken up the thread with good hopes of proving an alibi for the accused. With nine charges of embezzlement and forgery standing against him in addition to the murder charge, it looks as though young Figel would have a hard time clearing himself, though he expresses himself as confident of doing so.

Manager Vining of the Market street railway system, controlling almost the entire street railway service of the city, has earned much contempt by ordering the arrest and imprisonment of nine little news boys. They are accused of procuring transfers from passengers, who accept them with no intention of using the same, and offering them with their papers as an inducement to help their business. In this way many people get a ride and a paper for a nickel, and the loss to the railroad is probably one dollar a day. The boys, who were arrested without an exception, have somebody depending on their meager earnings.

For a long time past the women of the Chinese Rescue Mission here have been waging war upon the slave owners of Chinatown, and in many instances have, with the assistance of the police officers, raided many dens and rescued therefrom Chinese girls who were being held in slavery. The slave owners have finally become so incensed by this untiring crusade of the mission women, that they are seeking some legal means of restraining future raids, and also hope for the restoration of their property. For this reason they have levied an assessment