THE LICK MONUMENT TO CALIFORNIA.

The Lick monument was unveiled with appropriate ceremonies, conducted by the venerable body of California Pioneers, on November 29, 1894. No other State in the Union has had a monument erected to commemorate its history, growth and progress.

The late James Lick left a will in which he bequeathed to the city of San Francisco $100,000, for the erection of a monument "which shall represent by appropriate designs and figures the history of California, from its early settlement to the present time."

Four years ago Frank Happersberger, a native of California, but educated in Europe, was awarded the contract for the monument. Thirty-two designs were submitted by local, Eastern and European sculptors, among which Happersberger's was considered the most artistic and the most historical. That the trustees made a wise selection is proved by the handsome monument which now stands in front of the new City Hall.

The ground plan of the monument is cruciform in shape, with four extended wings or pedestals. Rising from the center, the spherical shaft reaches a height of 47 feet from the base to the top of the spear of the bronze figure on top.

Surmounting this shaft is the heroic bronze statue of "California." This is the main figure, 12 feet high and weighing over 8,000 pounds. Standing beside her is the California grizzly bear, without which a monument to California would be incomplete. Surrounding the shaft are four high reliefs, typifying different scenes in California history, as the trip across the plains, trappers bartering with Indians, vaqueros lassoing a steer.

Below these reliefs are medallion portraits of the builders of the State and early explorers, Cabrillo, Drake, Serra Portala, Sloat, Stockton, Fremont and others.

On the two side pedestals are allegorical seated female figures, the one representing Commerce and the other Agriculture. Commerce is seated on a galleon, her feet resting on bales and in her hand an oar. Agriculture is represented by a woman sitting with a cornucopia of fruits in her left and a bunch of oranges in her right hand.

On the front pedestal is the mining group, a picture of three miners looking at a nugget of gold which one of them has just picked up. There is much realism in this piece and the grouping and execution are admirable.

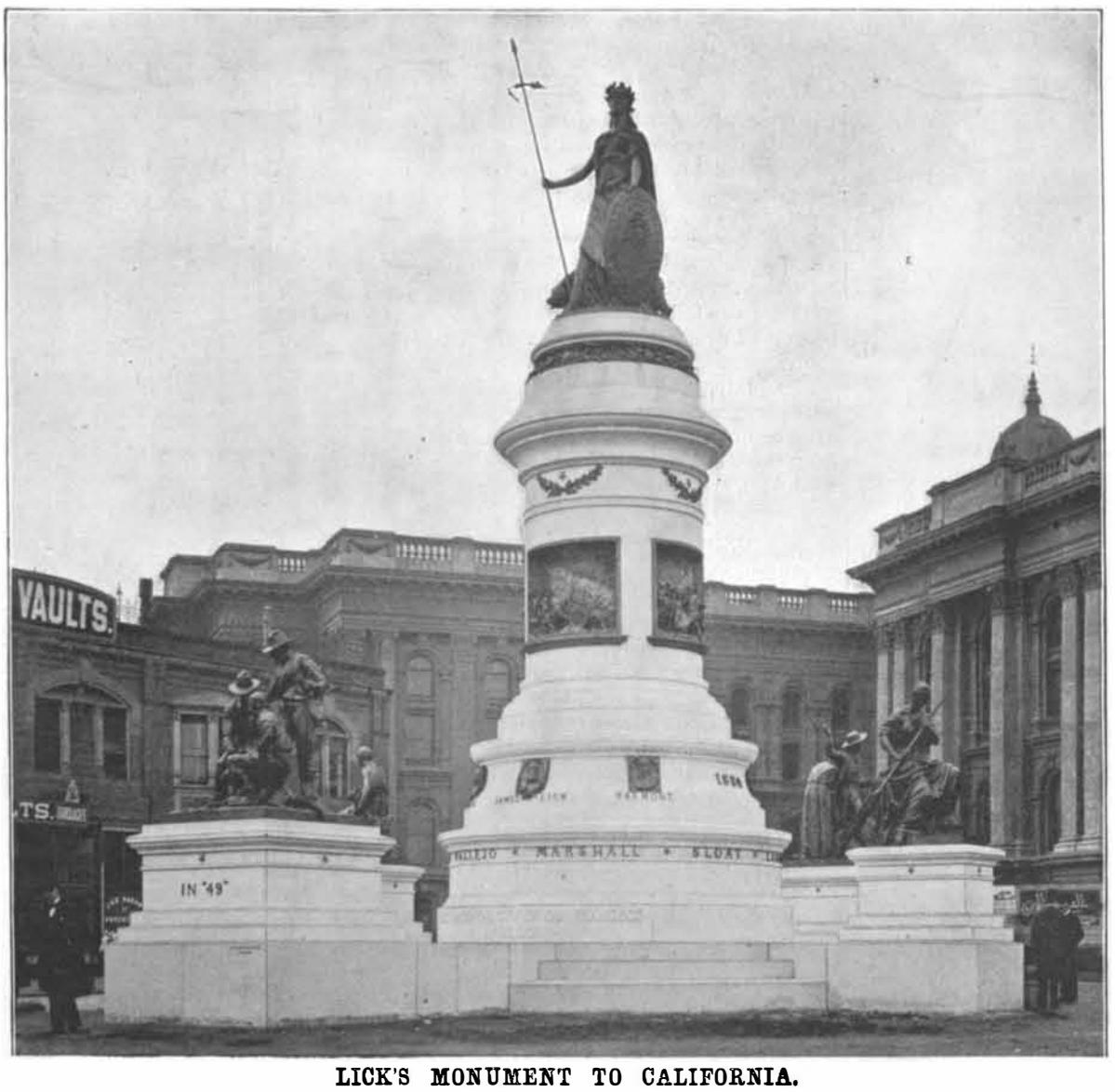
In the rear group are also three figures. An Indian is half reclining, gazing intently in the face of a cowled mission padre, who is bending over him, hand elevated, pointing upward.

Behind these two is a vaquero in the act of throwing a lassoo, the coils of which are thrown over his head.

Frank Happersberger, though still a young man, thirty-four years of age, has already executed a monument for San Francisco.

Ten years ago, while still a student in Germany, he was awarded, against twenty-six competitors, a contract to erect the Garfield monument. E. W.

BRONZE STATUE SURMOUNTING THE LICK MONUMENT TO CALIFORNIA.



LICK'S MONUMENT TO CALIFORNIA.

The Use of Captive Balloons at Sea.

The proceedings of the United States Naval Institute contain some interesting details which were communicated to the France Aerienne by Colonel Nicolas d'Orloff concerning the search made from a captive balloon to try and discover the whereabouts of the ill-fated Russian war ship Rusalka. The transport Samoyede was fitted up to facilitate the ascent of the balloon. The expedition was under the charge of an officer and twenty-five soldiers of the aerostatic park of St. Petersburg. For nineteen days the Samoyede was towed out from Helsingfors (Russia) every morning and towed back at night.

The balloon employed had a capacity of about 20,000 cubic feet; it ascended to altitudes varying from 656 to 1,443 feet; with a head wind it was towed at a rate of 2¼ knots; with a favorable wind the speed was sometimes increased to 6¾ knots per hour. Two observers were constantly in the car and were relieved every three hours. Glasses were not used, as it was found that the naked eye could discern objects at the bottom of the sea much better than when artificial aids were employed.

The conclusions arrived at were as follows: That at a height of 1,300 feet it was not possible to see the bottom of the sea to any great depth, in consequence of the impediments to vision offered by the color of the water and of the bottom. With a favorable light, rocks and sand banks were clearly defined at depths of from nineteen to twenty-three feet. Larger sand banks could be seen according to the color of the water at a depth of 40 feet.

Observations from a captive balloon are more easily carried out at sea than on land, because the air currents are more uniform and are not so subject to sudden changes. Vessels can be distinguished perfectly and there is no difficulty in recognizing whether they are merchantmen or men-of-war. Col. d'Orloff concludes that captive balloons would be of great utility as observatories to a fleet, enabling the officers to reconnoiter the entrance of unknown harbors, and for ascertaining the exact position of forts, batteries and other defenses. In time of peace the balloons could be used in hydrographical researches.

In the SCIENTIFIC AMERICAN for November 10, 1894, we described the use of the submarine detector in locating the position of the Russian monitor Rusalka, which foundered with all hands in a storm in the Gulf of Finland.

LEARNING FROM NATURE. — The air-tight compartment theory of building ships was copied from a provision of nature shown in the case of the nautilus. The shell of this animal has forty or fifty compartments, into which air or water may be admitted to allow the occupant to sink or float, as he pleases.