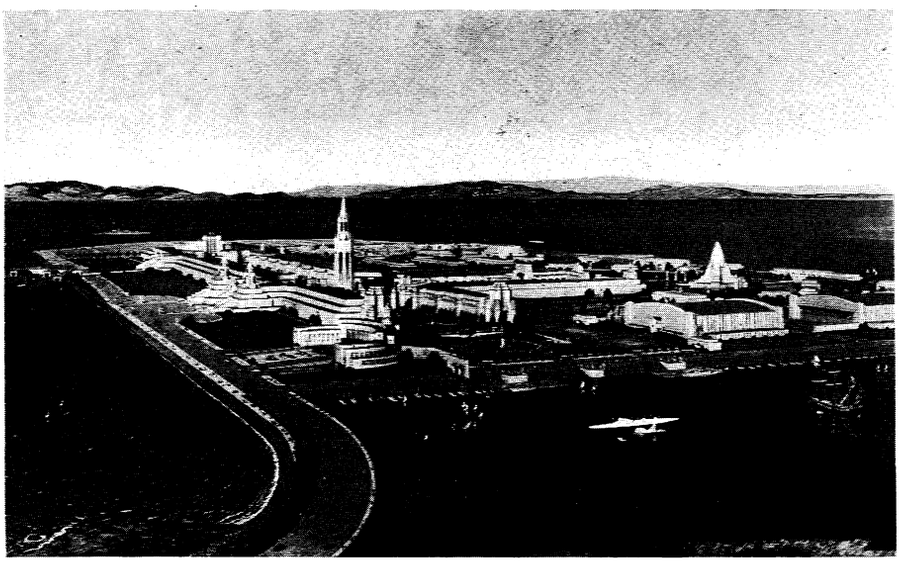

HOW IT WILL LOOK

Artist's conception of the completed fair grounds which will be reached by a causeway from the San Francisco-Oakland Bay bridge. The only permanent structures on the island will be two airplane hangars seen at right foreground. The island eventually will become San Francisco's airport.

extends thirteen feet above the surface.

Today it stands 100 per cent. completed, with only the final surfacing yet to be done. Before this surfacing is undertaken, however, the island will be given a bath. To make way for a $1,300,000 landscaping and horticulture program, sand in the island must be "unsalted" before trees, shrubs and flowering plants can be successfully transplanted. This will be done by a process called "leaching," which consists of keeping the ground continually soaked and drained with fresh water until the last grain of salt has been sent back to the sea.

Already the huge structure has brought about a noticeable effect on tides and currents in the Bay. U. S. Army Engineers and experts of the U. S. Coast and Geodetic Survey, after taking daily measurements of tides and currents for the last month, report that the unnatural square mile of earth has perceptibly changed their flow.

Science News Letter, September 25, 1937

PHYSIOLOGY

"Iron Lung" In Reverse Used to Study Breathing

ARTIFICIAL fever and an apparatus working like the socalled "iron lung" in reverse are now making possible new studies on what happens when animals like dogs, cats and rabbits use their specialized type of respiration known as panting. Allan Hemingway, Yale University chemist from the school of medicine, described how the animal's intake of air was measured by the "reverse" iron lung, before the meeting of the American Chemical Society in Rochester, N. Y.

The animal lies in the metal chamber with only its neck protruding through an air-tight seal. Every time it breathes it forces air in and out through special valves. The flow of air can be accurately measured.

While in the chamber the animal is subjected to artificial fever from diathermy machines. Soon the animal starts panting to establish a constant body temperature despite the excessive heat. Faster and faster the animal inhales and exhales the air to evaporate moisture from the tongue, mouth tissues and the upper part of the throat. Only these small areas, said Mr. Hemingway, provide the surface by which the animal must maintain even temperature. In man and horses, in contrast, sweat glands all over the body secrete water whose evaporation controls temperature.

Object of the Yale experiments was to study the effect of the rapid flow of air on the blood in the dog's panting method of keeping cool. One bad effect is that a too rapid motion can blow carbon dioxide out of the blood. Some carbon dioxide is needed in the blood stream in the form of the mild carbonic acid. When the carbonic acid content of the blood is reduced the normal acid-alkali balance in the blood stream is changed. In severe cases of carbon dioxide loss tetany develops; a morbid state characterized by intermittent muscular spasms.

The new Yale apparatus was designed to provide exact knowledge of the conditions in which tetany may occur. The project is part of a more general program of research on the chemical and physical temperature regulating mechanisms of the animal body and the ability of these mechanisms to withstand heat changes.

Science News Letter, September 25, 1937

PHYSICS

Heat Instead of Light For Heavy Weather Signals

FOG, shipping's deadliest enemy, appears one step nearer defeat with the announcement of successful heavy weather signaling by means of the Hayes Radiometer.

Tests have proved the practicability of the radiometer, originally invented as an extremely sensitive device for measuring heat radiation, its inventor, Hammond V. Hayes of Boston, reports (*Review of Scientific Instruments,* September).

The instrument makes practical the long hoped-for means of signaling by use of heat radiation instead of light. Heat rays penetrate foggy and thick atmosphere much more strongly than does light.

Boston harbor during the last winter was the trial ground for the radiometer, which is being improved as a result of the first experiments. Signals were sent successfully a distance of more than a mile and a half on days when visibility was so poor that objects situated much nearer than the heat source could not be picked out.

Science News Letter, September 25, 1937

Firm tomatoes may be stored for 20 days without losing much Vitamin C, it is found.