

METEOROLOGY

# Weather Bureau's "New Deal" To Change Forecasting Basis

## Weather Maps of Future Will Show "Battle Lines" Where Air Masses From North and South Contend

**W**EATHER maps issued by the U. S. Weather Bureau will take on some of the appearance of battle maps, if one of the outstanding recommendations of a special committee of the Science Advisory Board is put into effect. The preliminary report of this committee strongly advocates the adoption of the method of weather study known as "air-mass analysis," first developed in Norway, for general use in the United States. This method is not intended to supplant the one now in use, but to supplement it, so that weather maps with the familiar roughly elliptical outlines of "highs" and "lows" will be accompanied by others showing the weather as "battle lines."

The "battle-line" weather map is no mere figure of speech, for the air-mass analysis method of weather forecasting uses as its basic data information gained by the study of great moving mountains of air that migrate down from the poles and up from the tropics, meeting, pushing against each other, and over-riding or under-running like players in opposing football lines. The interplay of forces borne in these air masses gives us rain and snow, wind and fair weather. The air-mass analysis method has been in successful use in Europe for several years.

Airplanes, whose movements are benefited by the new method, are essential to the gathering of data used in it; for the air-mass analysis method must have figures on temperature, pressure and humidity from aloft as well as on the ground. For this reason, among others, the committee recommends also the integration of all the present separated weather-studying and reporting services into one central organization, consolidated under the Weather Bureau, except for the activities necessary to the Army and the Navy. The meteorological work of the Army and the Navy, however, should be closely coordinated with the work of the Weather Bureau, the committee recommends. This would have a double advantage, for Army and

Navy planes can be used for the gathering of weather data aloft in connection with their regular training schedules at little or no added expense, while the wire and radio reporting services, which the committee suggests should be concentrated in the hands of the Weather Bureau, will render fuller and more dependable information.

In addition to these two major recommendations, the com- (Turn Page)

ARCHAEOLOGY

## Ancient Statuary Revived In Colored Terra Cotta

**A**N ASSEMBLAGE of Greek gods and heroes, portrayed in life-like colors as they were in the temples of Athens, is a feature of the Pennsylvania Museum of Art. The picture shows the first of the tympanum-panels for the pediments, now in place.

An appreciative study of Philadelphia's revival of an ancient art method in *Art and Archaeology*, says:

"As viewed from afar the statuary

adds a scintillating spot of color to the building, although the brilliant hues are softened somewhat by the distance from the eye-level. The flesh-color becomes cool in tone, giving that godlike quality that was intended to be produced. The deep blue of the background becomes azureous and gives a feeling of transparency and vastness that gives the figures of the gods and goddesses an impression of solidity and dominance."

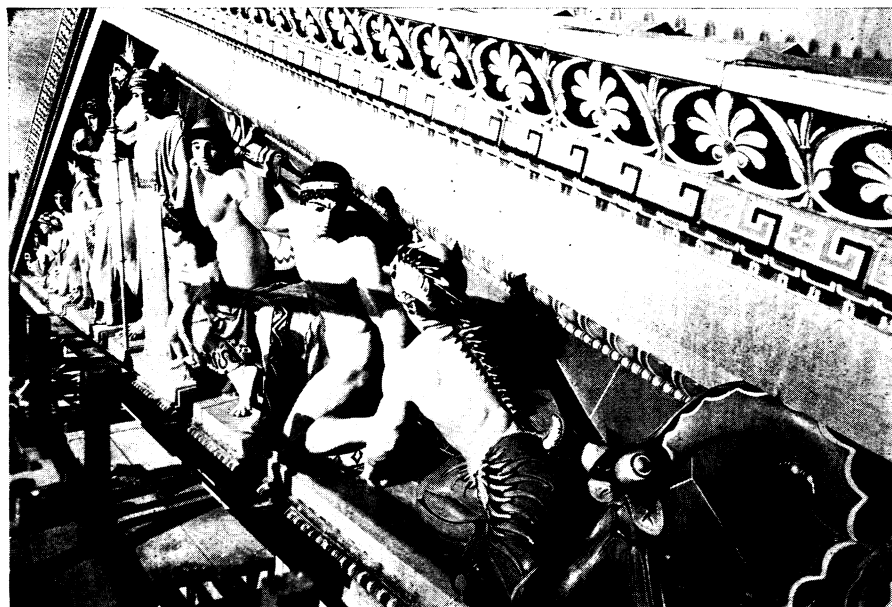
That the Greeks immortalized their gods, not in ghostly white figures but in beautiful color, dawned upon the modern world only a few years ago. Patches of color on faded statues revealed the forgotten fact, and showed that Greek cities must have been brilliantly colorful in their abundance of fine art.

The Pennsylvania Museum represents the first attempt in this country to reproduce the old and colorful art authentically on a large scale, placing it on a building of Greek design, so that the antique manner can be adequately appreciated. The statuary was manufactured by the Atlantic Terra Cotta Co.

The row of Greek notables includes, left to right: Aphrodite standing next to the central figure, Zeus; on his other side Demeter, holding the child Triptolemus by the hand; Ariadne, and Theseus kneeling to slay the Minotaur which crouches, half-man, half-beast, before him.

The figure of Zeus is twelve feet tall. The figures are of glazed polychrome terra cotta, as the ancient Greek artists would have made them.

*Science News Letter, December 9, 1933*



GREEK GODS IN PHILADELPHIA

*Art & Archaeology*

mittee also considers the following innovations desirable:

A certain decentralization of the general forecast work of the Weather Bureau by the establishment of more numerous district forecast centers in place of the five now existing.

An extension of climatological work looking toward long-range forecasting.

Efforts toward cooperation with other countries in the Northern Hemisphere, particularly Canada, Mexico and Russia (Siberia) in securing appropriate meteorological data which will disclose the movements of major air-masses over all these areas, in the interest of increasing the time range of weather forecasting.

"Postgraduate" training for Weather Bureau meteorologists, which will give their scientists the benefits of the best university and research institution training, keeping them constantly up to date in their information and methods.

Establishment of a permanent Weather Bureau Committee, composed of four

or five of the outstanding scientists of the country, to advise on matters of weather service and policy.

The committee, which has spent several months of intensive study and conference on Weather Bureau problems, consists of Dr. Isaiah Bowman, chairman of the National Research Council and director of the American Geographical Society; President Karl T. Compton of Massachusetts Institute of Technology; Charles D. Reed, observer at the U. S. Weather Bureau Station, Des Moines, Iowa; and, as chairman, Dr. Robert A. Millikan, director of the Norman Bridge Laboratory of Physics, California Institute of Technology.

The committee was appointed by the Science Advisory Board, which is a functional organ of the National Academy of Sciences and the National Research Council. The Board and its committees also have in hand other science problems of the national government, on which reports will be made later.

*Science News Letter, December 9, 1933*

#### ARCHAEOLOGY

## Masterpiece of Da Vinci Lost Four Centuries Reported Found

**U**NRECOGNIZED for four centuries, one of the long-sought masterpieces painted by Leonardo da Vinci has been found and identified, it is announced by Prof. J. D. Paulson of North Carolina State College.

From Leonardo da Vinci's long art career only two paintings have survived that critics universally agree are the work of his brush. To these two, the Mona Lisa and The Last Supper, must be added an important third, if Prof. Paulson's identification is accepted. The picture is the Birth of Christ. It was once among the Russian royal art treasures in the Hermitage of Petrograd. It is known as a painting by Botticelli and goes under the title The Adoration of the Kings.

Prof. Paulson, who has made a special study of obscure inscriptions on famous paintings, especially those possibly by da Vinci, finds a number of such identifying marks on the painting. Faint as they are, Prof. Paulson declares that they are visible to any average eye. Photographic processes using the proper color filters and panchromatic plates bring out the writing further.

These inscriptions are names and

monograms marked on the painting to identify certain persons depicted on it. Among the group of kings and attendants kneeling before the Christ Child, the artist worked in the faces of a number of personages of his day, Prof. Paulson explains. These included the Emperor Maximilian, for whom the picture was painted, the French King Charles the Eighth, who was in Milan planning the invasion of Italy, the Duke of Milan, who died the year after the picture was finished, and a full-length portrait of Leonardo himself showing how the great artist and scientific genius looked in his prime. The Leonardo portrait is said to be marked with his monogram and the date 1493. Prof. Paulson reports also finding Leonardo's device L D A V on the painting.

As corroborating evidence that the painting is by Leonardo, Prof. Paulson says that "it is mathematically balanced, based upon a perfected geometric skeletal structure, contains some passages of supreme delicacy, and includes portraits of an assemblage of persons which occurred only in Milan at the time when Leonardo da Vinci was working there."

*Science News Letter, December 9, 1933*

#### RADIO

## Inch-Long Radio Waves Interest Marconi

**W**HEN Guglielmo Marconi, the father of radio, visited the California Institute of Technology a few weeks ago he was most vitally interested in the experiments of Prof. G. W. Potapenko, who has developed a short wave generator.

Senator Marconi has been using 50 centimeter waves and was delighted to learn from Prof. Potapenko how to generate shorter ones down to 3 centimeters, only slightly longer than an inch. Prof. Potapenko's method has an additional advantage in providing very steady oscillations—an important feature not obtainable by older methods, but necessary for precise measurements.

The reason Senator Marconi wants short waves is that they can be concentrated in a beam like a searchlight beam. This saves energy and makes secrecy possible in wireless communication. To make a reflector for electromagnetic waves such as radio waves or light waves, one needs a mirror larger than the wavelength. This is easy for light but is inconvenient for any but the very short radio waves.

Prof. Potapenko is not working on communication problems at the moment but is applying his generator to high frequency magnetic and electric experiments. This field is almost unexplored, in spite of the fact that Dr. R. A. Millikan performed some of his earliest work along this line more than 35 years ago. The problem was to find out how the electromagnetic waves are absorbed by the molecules of various substances. Prof. Potapenko has only recently settled the matter and found that the molecules are rotated by the waves and relax gradually to their original position. The energy of the rotation is taken from the waves. When the frequency of waves is above a billion a second much energy is absorbed. This shows that the molecules take less than a billionth of a second for their relaxation time. The bigger molecules are more sluggish than the smaller.

*Science News Letter, December 9, 1933*

Although the first of the sunspots of a new cycle appeared last month, Mt. Wilson Observatory observations on Friday, Nov. 24, showed that there are spots of the old cycle still appearing on the sun's face. A group of two spots was found.