

METEOROLOGY

Weather Pattern Repeats

Weather conditions bringing storms to Northwest, warmer than usual weather to the rest of the nation remarkably like those during the 1949-50 season.

► COLD WEATHER and storms in the West—such as have marooned trains in California and Nevada—will re-occur periodically until mid-February.

Warm weather, and some much warmer than usual, in the rest of the nation will also re-occur periodically during that time.

This is the prediction of the U. S. Weather Bureau's Extended Forecast Section. The weather pattern is due to the presence in the Pacific about mid-way between Alaska and Hawaii of a great anticyclonic movement of winds in the air between 10,000 and 30,000 feet up.

These weather conditions are remarkably like the weather in this country during the winter of 1949-50 and for the same reason. An anticyclone—whirling winds around a center in a clockwise direction—in just about the same position, did just about the same things to the weather.

Our weather is influenced by a great wind current which travels around the northern hemisphere from west to east. This anticyclone is forcing that current to bulge northward over the northern Pacific. That forces a corresponding bulge to the southward down over the western United States and another bulge to the northward at just about Cape Hatteras.

This brings the cold weather down to the Pacific Northwest from Alaska, and warm weather up to the southeastern United States from the Gulf regions.

Jerome Namias, chief of the Extended Forecast Section, calls this close duplication of these weather conditions remarkable—something he never expected to happen again in his lifetime, until he foresaw indications of it in mid-December.

In 1949-50 this anticyclone kept reappearing, moving northward across the Aleutians into the Bering Sea. The weather pattern over the United States generated through the influence of the anticyclone also persisted through February.

If the 1951-52 anticyclone continues to copy its older brother of two years ago, we might expect the same things to happen to our weather again.

In almost exactly the same words as used Jan. 15, 1950, the Extended Forecast Section predicts for the period to mid-February that temperatures will average below seasonal normals west of the Continental Divide and in the northern plains but above normal elsewhere.

"The most unseasonably warm weather is expected in a broad belt from the Ohio valley southwest to Texas, while the coldest

departures from normal are indicated in the Pacific Northwest," the forecast said.

Snow and rain will exceed normal in the central and northern plains, the Great Lakes region and the Pacific coast states. Sub-normal amounts of rain are indicated in the South. Elsewhere near normal amounts are in prospect.

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ENGINEERING

Electronic "Brain" Joins U. S. Army in February

► AN ELECTRONIC "brain" is graduating from the University of Illinois next month, and, like many February graduates, will "join" the U. S. Army.

The high-speed computer's assigned post is the Ballistics Research Laboratories, Aberdeen Proving Ground, Md., where it will be used to help prepare gunfire tables and other involved mathematical problems. The machine's twin, whose parts were built

at the same time in order to cut costs, will remain on the campus after it is completely assembled in June.

Built under contract with the Ordnance Corps of the Army, the graduating computer is named ORDVAC, from Ordnance Variable Automatic Computer. Cathode-ray tubes, similar to television picture tubes, but only three inches in diameter, make the memory unit. The "memory" appears as glowing green dots on the face of the tube, 1,024 digits arranged in a square, 32 dots high and 32 dots wide.

Memory tubes store not only numbers, but also directions of what to do. In two weeks this machine can solve mathematical problems that would take a human more than a thousand years.

Computing machines which use magnetic drums as memory elements and those which use mercury memory storage elements are both being made commercially. No commercial organization has yet completed a machine with the electronic memory of the kind used in ORDVAC.

The National Bureau of Standards has two machines with ORDVAC-type memories, and Massachusetts Institute of Technology has one. Another ORDVAC type machine is now under construction at the Institute for Advanced Study in Princeton, N. J., where fundamental work pertaining to this type of machine was originally carried out by Dr. John von Neumann and co-workers.

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"ELECTRONIC BRAIN GRADUATE"—This high-speed computer is "graduating" from the University of Illinois in February, and, like many other graduates, will "join" the U. S. Army, solving problems in ballistics at the Aberdeen Proving Ground, Md. Prof. Ralph E. Meagher is holding one of the cathode ray memory tubes.