

MEDICINE

Bacitracin Saves Patient When Penicillin Fails

➤ BACITRACIN, antibiotic drug obtained originally from germs in an infected wound, is credited with saving the life of a patient ill with a serious heart ailment.

The case, said to be the first in which bacitracin was "largely if not entirely" responsible for the patient's recovery, is reported by Drs. Charles K. Friedberg and Mortimer E. Bader of New York in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (Sept. 1).

The patient, a 28-year-old diamond cutter, had a staphylococcus infection of the lining membrane of his heart. Acute bacterial endocarditis is the medical term for this condition.

"Huge doses" of penicillin, aureomycin and chloromycetin were given over a period of 12 days. But the patient was still critically ill. So the doctors decided to try bacitracin.

Laboratory tests had shown that the germs causing the trouble were very sensitive to the action of bacitracin. This antibiotic was given together with penicillin and aureomycin, so it is not possible to say that bacitracin alone was responsible for the cure. The doctors think it was, however, since the fever went down rapidly and the patient began to get well promptly after bacitracin was added to the other antibiotics.

Bacitracin seems likely to become more important in the future because doctors are finding more and more strains of staphylococcus and other germs that are resistant to penicillin.

Science News Letter, September 8, 1951

METEOROLOGY

Hotter than Usual Weather Predicted for Half of Nation

➤ SEPTEMBER IS going to be hotter than usual for just about half the nation, east of a line extending from the Wisconsin-Minnesota area down to the New Mexico-Texas area. West of the continental divide and in the western portions of the northern plains area, September will be cooler than normal. In between the two areas, about normal temperatures will prevail.

This is what the Weather Bureau's Extended Forecast Section predicts in its regular, twice-a-month 30-day forecast.

Plains and Rocky Mountain states can expect more than the usual amounts of rain during September. East coastal areas will have moderate to locally heavy amounts of rain. Less than normal rainfall can be expected in a strip extending from the Gulf States to New England. Elsewhere near normal amounts are expected.

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BEDROCK SURVEY—Going over the side to start a day's work is the transmitter of a standard Blutworth depthfinder, used as a check in shallow waters of the more powerful apparatus with which the Bay of Fundy was recently surveyed. The scene is aboard the *David C. MacNichol*, a coastal freighter pressed into service as a research vessel.

NATURAL RESOURCES

Tide Power Project

Survey bottom of Passamaquoddy Bay with view to taking advantage of tides of Bay of Fundy. Sonar equipment shows it to be mostly rock, not mud and silt.

➤ THE PASSAMAQUODDY electric project to make electricity with the high tides of the Bay of Fundy off the Maine coast is a long step nearer realization as a result of a survey of the bottom of Passamaquoddy Bay.

The survey, made by a new method, showed that the bottom of the bay is mostly solid rock rather than the mud and silt engineers had previously believed it to be. This means that it is feasible from an engineering point of view to build a dam to harness the tides.

The survey, done jointly by the U. S. Geological Survey and the Army Engineers, used Navy sonar equipment which bounces a sound signal off the bottom. The signal reveals not only how far down the bottom is, but also what kind of a bottom it is—silt, gravel or rock. In addition, if the bottom is silt or gravel, the sonar signals tell how deep it is and at what level the solid rock starts.

The survey took only a few weeks and cost only \$50,000 as compared with much more time and an estimated \$2,000,000 for the old method. Previously engineers had to use the coring method in which the bottom was plugged—like a watermelon.

The old method was used in 1935-1936 in another test area at Passamaquoddy. At this time, a great deal of sediment was found and it was deduced that the rest of the coastal area also was covered with sediment. This would have made building a dam extremely difficult and costly. However, the new sonar survey showed, according to the Geological Survey, that the upper two-thirds of the coastal area contains almost no sediment.

Last fall a joint Canadian-American commission reported that it would take \$3,900,000 to determine whether the Passamaquoddy project was feasible. Of this, \$2,000,000 was to be spent in finding out what kind of a bottom there was in Passama-

quoddy Bay. Now this work has been done with only \$50,000 and the surveyors came up with a favorable answer.

In making the survey, the sonar device was hung over the side of a coastal freighter by a davit. The ship cruised slowly up and down in a series of more or less parallel courses, while navigators kept exact records of their position. The device is so sensitive that even schools of fish showed up and were recognized by the operators.

Still to be determined are the financial factors involved in the Passamaquoddy project. There are indications that these might be favorable.

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INVENTION

Two-Picture Camera Does Away with Photo Proofs

► TWO PICTURES are taken at the same time with a camera designed by Carl L. Mourfield, Dallas, Texas, on which he received patent 2,565,618. One is on flat paper film; the other on photographic negative film. The advantage of this camera is that no proofs need be made from the negative. A substitute for a proof is immediately available on the flat paper film.

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AERONAUTICS

Helicopter Aids Oil Location in Swamps

See Front Cover

► THE HELICOPTER has a new job. It is helping geologists locate deep underground formations favorable for oil by the so-called seismic method.

In this method explosions are made near the surface which send sound waves deep into the earth. These shock waves, as they are called, are reflected back to the surface by geological formations encountered. The reflected waves are picked up by receiving instruments in the vicinity of the explosions. From them much about the underground formations can be determined.

The part the helicopter plays is helping the geologists from one blast station to another. In the great swamp areas along the Gulf Coast in Louisiana, Texas and Venezuela what are called marsh buggies are in general use. They are motor vehicles with very large wheels which are equipped with gigantic rubber tires. Even then, travel is slow and difficult.

That is why helicopters, such as the one shown on the cover of this week's SCIENCE NEWS LETTER, have been substituted by Shell Oil Company in Marsh Island, La., for the marsh buggy. They are proving successful, for with them the seismic operation is accomplished some four times faster than with the lumbering buggy, officials declare.

Science News Letter, September 8, 1951

METEOROLOGY

Ice Age Weather Possible

Pattern of unusual weather might persist for months or decades and result in surface changes which could produce "ice age epochs."

► THE POSSIBILITY that a pattern of unusual weather could persist for months, years or decades and "result in ice age epochs" was seen by Jerome Namias, chief of the extended forecast section of the U. S. Weather Bureau in Washington.

Mr. Namias studied the persistent weather pattern of the winter of 1949-1950 to try to find out more about "anomalies" in weather. He was cautious about his conclusions, remarking that "adequate physical explanation is clearly beyond the present day limitations of theoretical meteorology."

Mr. Namias hypothesized, however, that the persistence of an anticyclone—a clockwise whirl in the atmosphere—in the eastern Pacific in the winter of 1949-1950 was probably a result of two main factors: its harmony with the general wave pattern of the air in the upper atmosphere, and an encouraging influence resulting from the action of the sun upon the earth at that time of year.

If that hypothesis is correct, he said, then large-scale atmospheric states carry with them their own seeds for creating new states. And the same weather pattern, oc-

curing at different times of the year can behave in radically different manners.

Puzzling persistence of "unusual" weather patterns for long periods, and also abrupt changes in long-period weather regimes, he further concluded, may find their explanation in this self-developing mechanism. And, finally, the persistence could build up over a period of time long enough to change the amount of snow cover or the ocean temperature and this could result in ice epochs.

Mr. Namias traced the path of the anticyclone as it travelled northward in the Pacific from a point south of Alaska and west of Lower California. It began in mid-December and by the month of March it had curved up west and north of Alaska and down into Canada. To see more clearly the long range effects of this anticyclone, he used averages over the period of a month, rather than trying to work with day-to-day variations in weather conditions.

The anticyclone was one of the factors which produced an unusual winter in this country. For much of the time, temperatures in the east were above normal and temperatures in the west below normal.

Mr. Namias believes that the anticyclone persisted so long because it was in harmony with the rest of the weather conditions in the northern hemisphere. The pattern in the atmosphere contributed to its persistence. If it had not been in harmony, he said, if it had been "dissonant," the anticyclone would not have lasted so long.

Mr. Namias' study of this anticyclone and his conclusions appear in the JOURNAL OF METEOROLOGY (August).

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ANATOMY

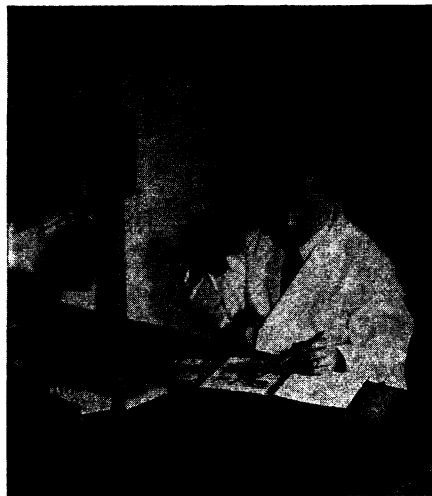
New Anatomy Atlas in 3-Dimensions and Colors

► THE FIRST phase of a complete atlas of human anatomy in three-dimensional kodachrome transparencies, each keyed to a matching diagram drawn to scale, has just been completed.

Co-authors, as it were, of this new atlas are Dr. David L. Bassett, associate professor of anatomy in the Stanford University Medical School, Calif., and William B. Gruber, research engineer of Portland, Ore.

The first section of the work covers the human central nervous system. It has taken two years to complete and will be published early in 1952.

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STEREOSCOPIC ATLAS—A three-dimensional kodachrome picture atlas of the human anatomy will show medical students the actual depth relationship of vessels, arteries and layers of tissue. Here Dr. David L. Bassett of Stanford University, Calif., demonstrates how the Atlas and explanatory text will be used.