

Meteorite Yields Diamond

► **THE LARGEST DIAMOND** ever found in a meteorite has been discovered in a fragment from the Arizona Meteorite Crater.

It measures some three and a half millimeters in diameter, or slightly more than one-seventh of an inch. The largest meteoritic diamond previously known, on display at the American Museum of Natural History in New York, is two millimeters in diameter, or about one-twelfth of an inch.

The new meteoritic diamond was discovered when Ronald A. Oriti of Griffith Observatory, Los Angeles, was cutting a meteorite he had picked up on the east rim of the crater. It does not resemble a polished stone at all, but is opaque and dark, with tiny protruding knobs.

The diamond is being studied by Dr. George C. Kennedy of the University of California at Los Angeles.

The origin of diamonds in meteorites is a subject of controversy. Dr. Kennedy believes that the diamonds in the Arizona Crater meteorites ex-

isted in the specimens long before they fell to earth, and that they give some clue to conditions under which the meteorites were formed.

Dr. Edward Anders of the University of Chicago, on the other hand, believes the diamonds were formed by the shock of the great impact that carved out the Arizona Meteorite Crater, which is 4,150 feet in diameter and 570 feet deep.

Dr. Anders maintains that the shock wave passing through the meteorite produced pressures great enough to convert the graphite in the nodules into diamonds. He believes that diamonds are found only in specimens showing strong evidence of shock.

A portion of the meteorite containing the large diamond is being examined for evidence of shock by Dr. Anders. The rim on which the meteorite was found rises nearly 150 feet above the surrounding plain.

• *Science News*, 89:267 April 16, 1966

GEOLOGY

Continents 'Sprinted'

► **THE MASSIVE** continents in existence some 270 million years ago may have "sprinted," not drifted, at a rate of about one-half to three-quarters of a foot per year, a scientist in India believes.

During a period of about 25 million years, parts of the super-continent Gondwanaland may have "sprinted" through about 35 degrees of latitude at a "fantastic rate," said F. Ahmad of Aligarh Muslim University, Aligarh, India.

Basis for these calculations lies in the analyses of fossilized plants and animals in the Salt Range of what is now Pakistan. These fossils give records of climate changes from cold glacial eras to warm, tropical periods, he reported in *Nature*, 210:81, 1966.

The changes in climate occurred when widespread areas in different continents of the Gondwanaland mass moved around and came successively under the polar ice cap. During that time, the ice cap was located in the areas formed by the congested tips of South America, South Africa and South Australia.

Scientists have long been arguing about the continental drift theory, which in essence states that once the continents were pieced together in one huge super-continent called Gondwanaland. The separate continents broke away from the super-continent and slowly drifted apart. The pro-drift

scientists believe that certain continents existing today were once fitted together like pieces of a jigsaw puzzle—for instance, the eastern coast of South America seems to conform to the western coast of Africa.

Dr. Ahmad's figures for the speed of continental drift may be the fastest ever reported. He claims that strong convection currents of heat and mass inside the earth during the Permian period, 270 million to 280 million years ago, may have been responsible for the high speeds of from 0.49 to 0.71 feet a year.

Escape of heat through volcanic eruptions and movements of the earth belts during the folding and mountain-building era could have caused the currents to subside and the drift to slow down.

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METEOROLOGY

Weather Predictions For Two Weeks Foreseen

► **WEATHER** conditions two weeks in the future could be predicted if wind and temperature patterns were known accurately on a worldwide basis.

The most promising method of obtaining weather information on a global scale would be a combination of earth-circling satellites and high-fly-

ing balloons. As the orbiting satellite passed over each balloon, it would record from the balloon's instruments such factors as wind speed, temperature and humidity.

The information from each balloon, including its position at the time of observation, would be stored in the satellite until a ground station requested the data to be sent to earth. A test of such a system is now being made with constant-pressure balloons, launched two each day from Christchurch, New Zealand.

A strong recommendation that such a system be developed on a planetary basis was made in Washington, D.C., by the National Academy of Sciences' panel on International Meteorological Cooperation.

The panel concluded that a "major international research and development program directed toward an experiment to measure the large-scale motions of the entire lower atmosphere" is fully justified both because of its scientific potentialities and because it is technologically possible.

Calculations using numerical computers have shown that if the actual state of the atmosphere at any one time is known, large-scale motions will be predictable for about two weeks ahead.

Electronic computers with speeds 100 to 1,000 times the speed of the fastest now commercially available will be needed to make full use of the global data, the panel noted.

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GEOLOGY

Mile-Deep Well Dug Out of Solid Rock

► **WHAT MUST** surely be the world's deepest wastebasket, 5,896 feet, has been drilled through layers of sandstone.

"I had to rework much of the geology of western Michigan before the depths and potentials of the area could be determined," said Richard M. Winar, the geologist assigned to make preliminary studies.

The mile-deep disposal well, which cost about \$100,000, was drilled to give the Holland-Suco Color Company a place to dispose of about 36,000 gallons of waste daily from color pigment production. After solids are extracted in two large settling tanks, the remaining liquid waste is pumped into porous, sponge-like sandstone through the disposal well, a new and increasingly used method of getting rid of industrial wastes without endangering water resources.

It disperses into the surrounding sandstone of a huge deposit known as the Mt. Simon, which extends from Michigan into Wisconsin and Canada.

The wastebasket should be good for a long time, as the Mt. Simon deposit is equal in volume to several Lake Michigans.

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