

## VOLCANOLOGY

# Volcano Makes Mud Rain

Oceanographer and naturalist-photographer are first men to set foot on San Benedicto Island where new volcano, El Boqueron, belched forth last summer.

► TWO SCIENTISTS sat on the edge of an erupting volcano on San Benedicto Island, and are alive to tell the tale. They even have pictures to prove it.

The two men, oceanographer Adrian Richards and naturalist-photographer Lewis W. Walker, were the first men to set foot on this desolate Pacific island off the tip of lower California since last summer, when El Boqueron, the volcano, blew itself into existence. (See SNL, Sept. 27, 1952, p. 195.)

They hit the beach Dec. 9 and spent two days studying the volcano. They not only scaled its sides between eruptions, but sat inside its crater a few feet distant from volcanic rocks "hot enough to roast marshmallows." They also got night color pictures of a glowing delta of lava at the crater's base, an eerie vision in white, red and orange flame.

It took them an hour and a half to ascend from the beach to the crater's rim, 1,250 feet above sea level. At times they were up to their knees in the fine volcanic ash that blankets the island.

As they gazed out from the rim they saw a saucer-like bowl, half a mile wide and 300 feet deep. The floor was broken up into two circular motes, one inside the other.

"When we got to the rim," said Mr. Richards, "we heard a roar such as you would expect from a hundred jet airplanes." He explained the noise was connected with high-pressure steam or gas emissions from a rock pile near the point where they reached the rim.

While Mr. Richards, a graduate student at Scripps Institute of Oceanography in La Jolla, was studying the strange new spectacle, Mr. Walker was roaming around the bottom of the crater with camera and tripod in hand. He noticed his feet were getting so hot he had to keep moving them. He looked down at one of the legs of his tripod and noted it was charred.

Suddenly, said Mr. Richards, a vent in the black inner circle of the crater began belching smoke. Soon the whole bottom of the crater was filled with black smoke which fortunately missed Mr. Walker, who was on the windward side.

Twice more, during the period of exploration, El Boqueron threw great clouds of smoke 3,000 feet into the air.

Their most interesting find, however, lay at the base of the volcano, where a hole was spewing out gigantic amounts of lava. As the blocks of red-hot lava met the sea they sent up a geyser of steam. In the two days the scientists were on the island, the delta formed by this lava grew from 700

feet in width to 1,200 feet. At the same time its mouth moved up the mountain from 140 feet above sea level to 192 feet.

At night the delta glowed like an artist's palette. Its color ranged from almost white heat at the mouth, through orange to nearly red where the blocks of lava reached the sea. The scientists estimated the temperature of the delta at 2,300 degrees Fahrenheit.

The scientists explained that they did not see any molten lava. The block lava does not melt but moves in tremendous landslides.

The scientists found their real action when they tried for close-up color pictures, after dark, of the gigantic lumps of orange-glowing lava sliding into the sea.

While Mr. Walker was busy taking pictures, pebbles started raining from the sky "by the bucketful." From previous observation the two knew these pebbles were the signal for a landslide. They were caught between the hot lava on one side and a pounding surf on the other—with a landslide coming up. They beat a fast retreat along a narrow beach and escaped.

Dog-tired, the men made camp at the base of the volcano. They were awakened at five in the morning by a shower of pebbles. The volcano was erupting. In five minutes the pebble shower turned into rain. The men gazed at each other in surprise, only to find they were both spattered with mud. The volcanic cloud had succeeded in precipitating atmospheric moisture, and had mixed with the rain to make mud.

"It was tough," Mr. Walker said. "If you looked up to see what was falling next, you got mud in your eye."

The daring scientists took the trip entirely on their own, hitchhiking on boats of the San Diego tuna fleet. They are reporting their observations to scientists at the Scripps Institute.

## New Volcano Is Continental

When scientists Mr. Richards and Mr. Walker returned to La Jolla, Calif., from their exploration of El Boqueron, they had plenty to tell their associates and friends at the Scripps Institute of Oceanography.

Dr. Francis Shepard, professor of marine geology at Scripps, expressed particular interest in their samples of the lava found in the volcano. Investigation proved it to be acidic.

Dr. Shepard said this showed the volcano is of a continental rather than an oceanic type. This is surprising inasmuch as San Benedicto rises from the Pacific Basin and is not a part of the continental shelf.

Mr. Walker reported that he found no life on the island but ran across some peculiar tracks. He described them as holes that looked as if they had been made with an ice pick. He ascribed them to land crabs, although he did not see any of the species around.

Science News Letter, January 10, 1953

A shortage of rice is one of the most serious aspects of the world grain situation.

By equipping ocean-going vessels with long rails of magnesium, engineers have cut the hull corrosion that otherwise requires periodic dry-dock attention.

## SCIENCE NEWS LETTER

VOL. 63 JANUARY 10, 1953 No. 2

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N. St., N. W., Washington 6, D. C., North 7-2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Copyright, 1953, by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service. Science Service also publishes CHEMISTRY (monthly) and THINGS of Science (monthly).

Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566, and 360 N. Michigan Ave., Chicago, State 2-4822.

## SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Karl Lark-Horowitz, Purdue University; Kirtley F. Mather, Harvard University. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; R. A. Millikan, California Institute of Technology; Homer W. Smith, New York University. Nominated by the National Research Council: Ross G. Harrison, Yale University; Alexander Wetmore, Smithsonian Institution; Duane Roller, Hughes Aircraft Co. Nominated by the Journalistic Profession: A. H. Kirchhofer, Buffalo Evening News; Neil H. Swanson, Baltimore Sun Papers; O. W. Riegel, Washington and Lee School of Journalism. Nominated by the E. W. Scripps Estate: Frank R. Ford, San Francisco News; John T. O'Rourke, Washington Daily News; Charles E. Scripps, E. W. Scripps Trust.

Officers—President: Harlow Shapley; Vice President and chairman of Executive Committee: Alexander Wetmore; Treasurer: O. W. Riegel; Secretary: Watson Davis.

Staff—Director: Watson Davis. Writers: Jane Stafford, A. C. Monahan, Marjorie Van de Water, Martha G. Morrow, Ann Ewing, Wadsworth Likely, Allen Long, Horace Loftin. Science Clubs of America: Joseph H. Kraus, Margaret E. Patterson. Photography: Fremont Davis. Sales and Advertising: Hallie Jenkins. Production: Priscilla Howe. In London: J. G. Feinberg.