

and Dr. G. J. Hardin. Chlorellin was found able to stop the growth of a strain of *Staphylococcus aureus*, the boil bacterium, that had become resistant to the action of penicillin.

Science News Letter, December 23, 1944

Artistic Indian Sandals

► INDIANS living in North America from the third to the twelfth century A.D. expressed their craving for beauty not by constructing magnificent monuments or by molding elaborate pottery, but by making sandals of intricate design, states Dr. E. H. Morris, who directed the study.

Many of the cross-woven sandals, with their flat soles of tight, hard fabric, are made entirely of yucca fiber. Others, however, used yucca only for the warp and made the weft of such materials as Indian hemp, human hair and, in more recent times, even cotton. These were dyed yellow, several shades of red, brown or black.

In many of the sandals found in Arizona, Utah and New Mexico, supplementary warp and weft were wrapped and twisted about one another, resulting in a two-ply fabric held together only by occasional loops.

Science News Letter, December 23, 1944

Columns and Altars

► THE DISCOVERY of new stelae and altars in Chiapas, Mexican state near Guatemala, by Dr. and Mrs. S. G. Morley, and correcting readings on two of the ancient columns, extends backward some 50 years, to about 475 A.D., the dating of monuments in this region that were known to have been created at a definite period.

On the basis of these dated remains, this makes Altar de Sacrificios, which lay at the crossroads of the Old Empire, 40 years earlier than any other known city in the Usumacinta Valley. It also again raises the unsettled question, Dr. Morley states, of just what route Maya culture followed in reaching this valley.

Good evidence was found that the Maya used rebus writing, where words or phrases are expressed by pictures of objects whose names resemble these words or the syllables of which they are composed. J. E. S. Thompson advanced evidence that the symbol for counting was the figure of the mythical fish called "xoc," since this and the Yucatec word "xoc," meaning "count," sound alike.

Science News Letter, December 23, 1944

MILITARY SCIENCE

Oil Bomb Damages City

Known as the M69, this terrifying new weapon is credited with creating a fire that all but destroyed the northwest section of the city of Changsha, held by the Japs.

► A TERRIFYING new six-pound oil bomb, known as the M69, is credited with creating a fire that all but destroyed the northwest section of the city of Changsha, China, now occupied by the Japanese, the first time it was put into use, last July.

Landing in the streets and on rooftops, the bomb spits chunks of flaming oil up to 25 yards in all directions. These flaming chunks of oil cling to the surface of whatever they strike, making them one of the most effective fire-starters developed in this war. The glow against the sky above Changsha was visible to Army Air Force pilots for 80 miles, and columns of black smoke could be seen rising more than half a mile.

The new fire bomb, developed by the Chemical Warfare Service, consists of a slender six-sided steel case 19 inches long and no bigger around than a baseball bat. The center portion of the cylinder holds a cheesecloth sock containing about three pounds of gasoline blended with a thickening compound. This mixture looks like orange gelatin, and it burns at a temperature of about 3,000 degrees Fahrenheit.

The thickened oil is similar to that used in Army flamethrowers. Each bomb holds enough of the jelly-like substance to make a flaming flapjack a quarter of an inch thick and a yard in diameter.

White cloth streamers, packed in the tail, act like parachutes to slow the descent of the bomb so that it will not smash to bits when it lands, and yet leaving it with sufficient force to pierce roofs covered with tile, slate, wood, galvanized iron, or composition shingles.

In about five seconds after the bomb lands, a delayed action fuse spits out the cheesecloth sock from the tail of the bomb and ignites it. The bomb burns for 8 to 10 minutes. The bombs are dropped from planes in clusters of 38. A total of 78 clusters of the M69 bombs were used in the Changsha raid.

The M69 is an outgrowth of research dating back to 1941 to discover a substitute incendiary mixture at a time when large quantities of magnesium for incendiary bombs were not available. The Office of Scientific Research and

Development and the Chemical Warfare Service worked out the petroleum-base incendiary compound. After exhaustive tests, both the mixture and the bomb design were standardized.

Science News Letter, December 23, 1944

SCIENCE NEWS LETTER

Vol. 46 DECEMBER 23, 1944 No. 26

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

Subscriptions—\$5.00 a year; two years, \$8.00; 15 cents a copy. Back numbers more than six months old, if still available, 25 cents. Monthly Overseas Edition: By first class mail to members of the U. S. armed forces, \$1.25 a year. To others outside continental U. S. and Canada by first class mail where letter postage is 3 cents, \$1.25; where letter postage is 5 cents, \$1.50; by airmail, \$1.00 plus 12 times the half-ounce airmail rate from U. S. to destination.

Copyright, 1944, by Science Service, Inc. Republication 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.

Entered as second class matter at the post-office at Washington, D. C., under the Act of March 3, 1879. 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 in the Engineering Index.

The New York Museum of Science and Industry has elected SCIENCE NEWS LETTER as its official publication to be received by its members.

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 STAt 4439.

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: Edwin G. Conklin, American Philosophical Society; Otis W. Caldwell, Boyce Thompson Institute for Plant Research; Henry B. Ward, University of Illinois. **Nominated by the National Academy of Sciences:** Harlow Shapley, Harvard College Observatory; Warren H. Lewis, Wistar Institute; R. A. Millikan, California Institute of Technology. **Nominated by the National Research Council:** C. G. Abbot, Smithsonian Institution; Hugh S. Taylor, Princeton University; Ross G. Harrison, Yale University. **Nominated by the Journalistic Profession:** A. H. Kirchhofer, Buffalo Evening News; Neil H. Swanson, Executive Editor, Sun Papers; O. W. Riegel, Washington and Lee School of Journalism. **Nominated by the E. W. Scripps Estate:** Max B. Cook, Scripps Howard Newspapers; H. L. Smithton, Executive Agent of E. W. Scripps Trust; Frank R. Ford, Evansville Press.

Officers—President: Edwin G. Conklin. **Vice President and Chairman of Executive Committee:** Harlow Shapley. **Treasurer:** O. W. Riegel. **Secretary:** Watson Davis.

Staff—Director: Watson Davis. **Writers:** Frank Thone, Jane Stafford, Marjorie Van de Water, A. C. Monahan, Martha G. Morrow, Robert N. Farr. **Science Clubs of America:** Joseph H. Kraus, Margaret E. Patterson. **Photography:** Fremont Davis. **Sales and Advertising:** Hallie Jenkins. **Production:** Dorothy Reynolds.