

TECHNOLOGY

Mud-Jacking Raises 300 Floors in Housing Area

► HOME OWNERS who have become dismayed because the floors in their houses have sunk may find new hope in a quick, easy and relatively inexpensive method of raising the concrete slab back to where it should be.

Called mud-jacking, the method was used in Pearl Harbor, T. H., by the District Public Works Office when about 300 concrete floors sunk in Naval Base Housing Areas. Some of them settled as much as seven inches.

A slurry of mud and water was mixed and pumped through holes drilled in the concrete slabs. Under a pressure of 100 pounds per square inch, the mud gushed from the hose nozzle and restored the slabs to their proper position.

Improvements in the process were made as more floors were raised. The last 33 floors restored in March cost an average of only \$42.66 each. If the slabs had been broken, removed and replaced, the cost would have been about \$325 each.

Although mud-jacking is not new, it has not found widespread use in raising concrete flooring slabs of houses. The method has previously been used primarily to jack up concrete approaches to bridges to eliminate bumps.

But before the process can be used on houses, the sunken slab must be made "free floating." That is, it cannot have walls resting upon it.

In houses where the walls are put up first and the concrete slab poured last, the binding between walls and slab is broken and mud-jacking begins. If the bond cannot be cut, the slab may crack under the pressure of the mud.

The process may be used in other housing projects as more persons learn about the new application. Already some floors in the United States have been restored by mud-jacking.

Details of the Pearl Harbor mud-jacking project are reported in the *Civil Engineer Corps Bulletin* (Aug.).

Science News Letter, September 6, 1952



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Books of the Week

For the editorial information of our readers, books received for review since last week's issue are listed. For convenient purchase of any U. S. books in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N Street, N. W., Washington 6, D. C. Request free publications direct from publisher, not from Science Service.

BEET-SUGAR ECONOMICS—R. H. Cottrell, Ed., *Caxton*, 379 p., illus., \$5.00. Beet sugar produced in the U. S. supplies about 25% of the domestic market and has to compete with cane sugar produced with cheap labor. Political aspects of this industry are also discussed.

THE CABINETMAKER'S TREASURY—F. E. Hoard and A. W. Marlow—*Macmillan*, 267 p., illus., \$6.00. Step-by-step procedures for reproducing period furniture, including drawings of authentic antiques. For the skilled craftsman or amateur.

CAMBRIAN STRATIGRAPHY AND PALEONTOLOGY NEAR CABORCA, NORTHWESTERN SONORA, MEXICO—G. Arthur Cooper and others—*Smithsonian Institution*, Smithsonian Miscellaneous Collections, Vol. 119, No. 1, 183 p., illus., paper, \$3.00. Cambrian rocks were not discovered in Mexico until 1941. The various groups of fossils now known are described.

THE CASE OF DORA AND OTHER PAPERS—Sigmund Freud—*Norton*, 243 p., \$3.50. Some of these eight essays, written between 1905 and 1918, were previously published under the title "Freud on War, Sex and Neurosis." The title paper is the history and treatment of a case of hysteria.

THE CRYSTAL STRUCTURE OF SOLID CHLORINE—Robert L. Collin—*Mellon Institute*, 2 p., paper, free upon request to publisher, 4400 Fifth Ave., Pittsburgh 13, Pa.

INTRODUCTION TO CONCEPTS AND THEORIES IN PHYSICAL SCIENCE—Gerald Holton—*Addison-Wesley*, 650 p., illus., \$6.50. An introductory text designed for students who do not intend to major in chemistry or physics. Presents basic ideas and theories rather than a survey of the field.

MAN INTO WOLF: An Anthropological Interpretation of Sadism, Masochism, and Lycanthropy—Robert Eisler—*Philosophical Library*, 286 p., \$6.00. Suggesting the possibility that crimes of violence, including murder and war, have their origin in man's evolutionary past.

MEETING OF MINDS: A Way to Peace through Mediation—Elmore Jackson—*McGraw-Hill*, 200 p., illus., \$3.50. A study of the techniques and practices used in settlement of disputes of labor and between nations, their similarities and dissimilarities, for the purpose of discovering how experiences in one field may contribute to the other.

PHOTOGRAPHY ANNUAL: 1953 Edition—Bruce Downes, Ed.—*Ziff-Davis*, 282 p., illus., paper, \$1.00. This year's edition of outstanding pictures, both American and foreign, contains a section on color photography and a number of picture stories. Notes in the back of the book tell how the pictures were taken and the equipment used.

PLAYTIME WITH PATTY AND WILBUR—Hugh C. McDonald—*Murray and Gee*, 31 p., illus., paper, \$1.00. Written by a police official in the hope that these stories, read by parents to children, will help to protect the youngsters from sex criminals.

THE SCIENCE OF ZOOLOGY—James C. Perry—*Bruce*, 709 p., illus., \$6.50. A text presenting zoology as a science in its own right and not as an introduction to specialized fields.

SPIKE: The Story of a Whitetail Deer—Robert M. McClung—*Morrow*, 64 p., illus., \$2.00. A child's story in large print telling what happens to this deer from the time he tries out his unsteady legs to the end of his first year when the spikes that will be his antlers appear.

SURFACE COMPLEXES ON CARBON BLACKS. I. High Temperature Evacuation Studies—R. B. Anderson and P. H. Emmett—*Mellon Institute*, 3 p., paper, free upon request to publisher, 4400 Fifth Ave., Pittsburgh 13, Pa.

TWELFTH SEMI-ANNUAL REPORT OF THE ATOMIC ENERGY COMMISSION—Gordon Dean, Chairman—*Govt. Printing Office*, 125 p., paper, 35 cents. A summary of major advances in atomic energy programs from January to June, 1952, including research in the medical, biological and physical sciences.

TV TROUBLESHOOTING AND REPAIR GUIDE BOOK—Robert G. Middleton—*Rider*, 204 p., illus., paper, \$3.90. Practical guide with limited theoretical discussions and explanations. Included is a chapter on test equipment emphasizing the oscilloscope.

VIRUSES AS CAUSATIVE AGENTS IN CANCER—C. P. Rhoads, Ed., *New York Academy of Sciences*, Annals of the New York Academy of Sciences, Vol. 54, Article 6, 360 p., illus., paper, \$4.00. Comprehensive collection of current studies on the microbial hypotheses as to the cause of cancer.

WINTER AND SPRING FLOWERS—Constance Spry—*Studio Publications* (Crowell), 140 p., illus., \$5.50. A companion volume to the author's "Summer and Autumn Flowers," it deals mainly with floral arrangements. In a chapter on Christmas decorations, she has some suggestions other than the traditional.

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Do You Know?

Animal life in the sea exists even to depths of four miles.

Vanadium once was so rare that a pound of it brought \$4,760.

Diesel locomotives, on the average, carry a ton of freight 500 miles on a gallon of fuel oil.

About 31 acres of ordinary woodland are required to give as much grazing for cattle as an acre of good pasture.

The puma and the housecat have similar tooth formations, but the American bobcat has two less teeth than the housecat.