

secondary and ignore the important and preventable causes of death hinder the reduction of deaths among the newborn, they assert.

They point to the need for further study of the factors responsible for premature births.

At present the principal and most helpful field of endeavor, these doctors declare, is to make certain that the infant is in skilled medical hands.

Science News Letter, August 14, 1937

CHEMISTRY

Cotton Industry Backward In Applying Chemistry

MOST laymen, and too many textile manufacturers also, think of cotton as a finished fiber that nature has produced, and to which man can do but little more than to spin and weave it into fabric. This lack of realization of what chemistry can do to cotton is a sizable factor in the rise of the synthetic rayon fibers. Rayon came out of the laboratory so that chemical treatment of these man-made fibers has been natural. Not so has been the processing of raw cotton into the newer finishes that attract the eye, lend utility and bring new profits.

Mercerizing cotton, for years, was about the only chemical treatment applied to cotton. But cotton treated with a solution of copper oxide in ammonia yields wool effects. A variation of this treatment gives a permanent lustrous finish approaching that of rayon.

Treating cotton with strong sulphuric acid will give either a linen or a parchment-like finish depending on controlled conditions. Even a measure of transparency can be obtained with sulphuric acid applied at low temperatures.

Dr. Walter M. Scott, textile expert of Gustavus J. Esselen, Inc., Boston consulting chemists also points out that the dyeing properties of cotton can be entirely changed and simultaneously special waterproofing effects produced by treating the cotton fibers so that they are partially converted to esters of cellulose. Ordinary cotton dyes do not "take" on such "immunized" cotton but dyes similar to those used for acetate rayon will.

With a few exceptions, Dr. Scott declares, the cotton industry as a whole is backward about using, to full advantage, the chemical knowledge that could aid it.

Science News Letter, August 14, 1937

DOCUMENTATION

American Delegation Goes to World Documentation Meet

AERICAN science, scholarship and libraries will be represented when the World Congress of Documentation convenes in Paris August 16 to discuss how the written and pictorial records of the world can be more efficiently organized.

An official delegation has been appointed by the United States, headed by Watson Davis, director of Science Service and president of the newly-organized American Documentation Institute.

Other members of the delegation include:

Miss Claribel R. Barnett, Librarian, Department of Agriculture; Dr. William Warner Bishop, Librarian, University of Michigan; Rudolph Block (Bruno Lesing) New York City; Dr. Worthington C. Ford, Honorary European Representative of the Library of Congress, Paris; Herman H. Fussler, Microphoto-

graphic Laboratory, University of Chicago; Miss M. Alice Matthews, Librarian, Carnegie Endowment for International Peace; Miss Margery Quigley, Librarian, Free Public Library, Montclair, N. J.; Miss Sabra M. Vought, Librarian, United States Office of Education; Prof. Douglas Waples, Graduate Library School, University of Chicago.

One of the subjects that will be most widely discussed is the use of microfilms in making available the literature of the world that can not be distributed in any other way because of the cost of printing and other methods of duplication. Microfilms are small photographs of books, manuscripts, photographs, and other material, each page or sheet occupying less than a square inch on what appears to be ordinary motion picture film. The cost of microfilm is only about a cent a page.

Science News Letter, August 14, 1937

DOCUMENTATION

Scholars Form American Documentation Institute

THE AMERICAN Documentation Institute, organized this year on behalf of some 60 national scholarly, scientific and informational organizations and institutions, is a creation of the intellectual world fashioned to attempt the solution of some of the problems that surround publication, bibliography, library facilities and other phases of documentation in the fields of research, education and learning.

It will give special attention to such new tools in documentation as microphotographic duplication. It will encourage, cooperate with and in some cases operate Bibliofilm Services (services for copying on microfilm) in libraries and elsewhere in order that the world's great store of recorded knowledge may be most easily accessible to those who need to use the literature for research purposes. It will cooperate with existing journals and institutions in publishing through microfilm essential research material that is not required in large editions.

In fields less new the American Documentation Institute will be able to act as an operating agency that can cut across different intellectual fields. Projects under investigation include document preservation, cooperative publishing by off-set lithography, etc.

By establishing relations with similar organizations in other countries and through participation in international efforts in documentation, the American Documentation Institute will be able to facilitate world interchange of literature and information.

The documentation activities of Science Service, the institution for the popularization of science, developed during the past two years became a nucleus for the American Documentation Institute. Such a national organization was foreseen as an outcome of Science Service's documentation activities when they were begun in July, 1935, implemented with grants from the Chemical Foundation and conducted with the cooperation of

the U. S. Naval Medical School, the U. S. Department of Agriculture Library, the Bureau of the Census, the Works Progress Administration, the Library of Congress and other agencies.

Organized as a corporation "not for profit" but for educational, literary and scientific purposes, the American Documentation Institute resulted from a meeting attended by delegates from national councils, societies, and other organizations in Washington on March 13.

The officers and board of trustees are: Watson Davis, Science Service, President; Robert C. Binkley, Western Reserve University, Vice-President; Solon J. Buck, National Archives, Treasurer; James Thayer Gerould, Princeton University; Ludvig Hektoen, National Research Council; Anne Shively, Secretary.

The functions of Science Service's Documentation Division were taken over by the American Documentation Institute on July 1. These consist of the Biblofilm Service, the Auxiliary Publication Service and related activities.

Biblofilm Service has been operated in the Library of the U. S. Department of Agriculture since November, 1934, and it has copied many thousands of pages of literature on microfilm for research workers. Arrangements have been made to extend Biblofilm Service to the Library of Congress and the Army Medical Library, also in Washington, D. C., in the fall when new microfilm cameras will be available.

The design and development of microphotographic apparatus carried on by Science Service with the cooperation of the Chemical Foundation, U. S. Navy, Bureau of the Census, Works Progress Administration, etc., has been largely completed and is now capable of being left in commercial hands. The American Documentation Institute will not engage in the sale and manufacture of apparatus, but will cooperate with all manufacturers and commercial concerns so far as practicable.

Supplementing the immediate operating and informational functions of the American Documentation Institute, there are research and development functions contemplated for the future. When facilities permit, investigations are planned upon the application of microphotographic techniques to bibliographical problems, involving selection from microfilm. This is a long-time project requiring much inquiry. There should be a continuing exploration into the methods and materials that enter into documentation, such as photographic methods and techniques, optics, psychological aspects, classifications, etc.

Many of the operations and projects have been described in documents issued for the information of those interested.

The address of the American Documentation Institute is Offices of Science

GEBOLOGY

Core Samples of Sea Bottom Sought on Voyage of Atlantis

THE NEXT voyage of the ketch Atlantis of the Woods Hole Oceanographic Institution will take cores from the ocean bottom that should disclose new knowledge of the world's prehistoric weather back to Ice Age days and beyond.

A new and special core-sampling device that is exploded by a charge of 155 m.m. howitzer cannon powder, and drives a core-boring mechanism into the sediment of the ocean bottom will be carried. The core-sampler's inventor, Dr. Charles S. Piggot of the Geophysical Laboratory of the Carnegie Institution of Washington, will be along as guest scientist for the cruise.

The itinerary of the voyage has not been settled definitely but one proposal has been to go from Woods Hole to the Gulf Stream and follow the great ocean current southward to the Virginia Capes. Then the Atlantis would turn westward to the continental shelf off the Atlantic coast and follow it north to Woods Hole, passing the under-ocean canyons that slice through the shelf in this territory.

Dr. Piggot's under water "gun" has already been used in ocean bottom studies in mid-Atlantic. For the coming cruise he has improved his previous mechanisms and will "stand by," as far as possible, to allow other scientists to learn to use the equipment.

The coming voyage will follow the present cruise of the Atlantis on which the ocean's bottom is being investigated in another way. Artificial, tiny vibration waves are now being set up in the mud on the ocean's bottom by exploding charges and the time of transmission of these waves to microphones laid on the floor of the sea is measured.

This technique uses vibration waves that are really artificial, small earthquake shock waves.

The waves start from the point of origin and go through the mud, cover-

ing the floor, to the solid rock at the bottom. There, a part of the wave is reflected and detected by the watertight microphones.

The speed of transmission of the waves can be used to disclose, in some detail, the thickness of the muddy bottom.

The experiments on the coming voyage will pierce the mud covering of the ocean floor. It has been found that these deposits contain the remains of prehistoric marine animals, layers disclosing great changes in the earth's climate including the great Ice Age, and also evidences of vast volcanic action at some time in the past, probably in Iceland.

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SAMPLING

Seamen raise the sampling gun that takes cores from the ocean bottom in mid-Atlantic to give scientists the records of a million-year-old past.