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EROSION IN PALESTINE

Palestine, traditionally a land of milk and honey, has been turned into a land of stones and poverty largely by bad farming, which permitted erosion to ruin its soil, according to an address by Dr. W. C. Lowdermilk, assistant chief of the U. S. Soil Conservation Service. Dr. Lowdermilk recently returned from a long study trip into the lands of old cultivation, of North Africa and the Near East.

A typical scene which he depicted is a once-fertile hillside area on the road from Beersheba to Jerusalem. The soil is now washed off the slopes to bare rock and lodged in the valleys. Dr. Lowdermilk pointed out, and he continued: 'There soil material has been sorted by storm waters each winter; the fine and fertile particles have been swept out to sea to change the beautiful blue of the Mediterranean to a dirty brown. The coarser material is spread out on former alluvium, where it is still available for cultivation. But more than this, the flashy run-off from the heavy winter rains on the bare slopes gullies the alluvium. The area of useful land has been progressively reduced.'

The ruin that ignorant, greedy or poverty-desperate farming brought to the soil has been clinched and deepened throughout the Mediterranean region by the cutting hooves and close-shearing teeth of the ubiquitous flocks of goats, that bite off and trample down every hopeful scrap of vegetation that might otherwise check the millennial erosion.

European agronomists living in the now arid regions are coming to a realization that considerable parts of the North African desert may have been man-made. Where now are only waste lands and ruined ancient cities, there were once great farms and groves that exported wheat and olive oil to Rome, and large and thriving populations.

Dr. Lowdermilk told of one French scientist in Algeria, who had come to question whether any great change in climate has occurred there since Roman times. He planted some young olive trees on a hill, watered them through their infancy, and then left them to take care of themselves. They are still alive and bearing good crops of olives, as their ancestors on the same hills did for Imperial Rome.

Summing up, Dr. Lowdermilk urged that land be considered 'not as an economic commodity but as an integral part of the corporate existence of a nation as its people are.'

POLARIZED LIGHTS FOR AUTOMOBILES

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How the automobile industry might solve the problem of introducing polarized headlights to eliminate nighttime glare was described at the meeting of the Society of Automotive Engineers in Detroit by P. J. Kent, chief electrical engineer of the Chrysler Corporation.

An agreement among manufacturers to install polarized lights on new cars after a given date would be the initial step. At the same time demountable polarizing screens for old car windshields could be made available to allow the beneficial polarizing, glare-eliminating effect for them also.

However, Mr. Kent pointed out, it would probably also be necessary to have new cars equipped, for a few years at least, with a standard beam-depressing switch so that their strong headlight rays could be lowered in meeting old-type cars. This depression of the beam would be needed until the old cars came to a lingering death and the end of their usefulness. Polarizing screens on headlights and windshields would be 'crossed' so that the polarized light rays could be extinguished and glare eliminated.

Still debatable, said Mr. Kent, is the question of whether headlight intensity would have to be stepped up with the introduction of polarized beams. The polarizing screens cut the light intensity emitted by the headlight some 60 per cent., he pointed out. It has been suggested that brighter headlights could overcome this absorption and also surmount the additional absorption of 60 per cent. encountered in the windshield screens.

The engineering problems involved in the switchover to polarized headlights are major ones and require considerable testing before they can possibly be applied to all automobiles. The problem is by no means as simple as the introduction of safety glass in cars, for polarizing the headlight beams can only gain its effectiveness if all cars possess the new invention. The benefits of safety glass, in contrast, were real and tangible immediately on its installation in any single car without respect to others.

THE SPREAD OF INFANTILE PARALYSIS

(Copyright, 1940, by Science Service)

New leads on research in infantile paralysis make the eventual conquest of this disease seem excitingly near at hand. Research plans announced by Basil O’Connor, president of the National Foundation for Infantile Paralysis, show that investigators are following new trails in their search for ways of preventing the disease.

Saliva from mouths of infantile paralysis patients both before paralysis sets in and during the paralytic stage will be examined for the virus that causes the disease. The clue for this line of search comes from the recent discovery of the virus in sewage from localities that were gripped by infantile paralysis outbreaks. The virus was also discovered in the intestinal discharges of patients and of healthy persons who did not have infantile paralysis, but who had been in contact with patients. This proved the existence of healthy carriers of infantile paralysis, akin to the healthy carriers of typhoid fever.

How do the healthy carriers and the patients spread their germs to others? The saliva tests may give the answer to that question. Infantile paralysis, it is now believed, spreads more like diphtheria than like typhoid fever. In infantile paralysis, as in diphtheria, there must be direct contact with a patient or a healthy carrier of the germs. In typhoid fever, water or food may spread the germs, which are discharged from the body with its waste matter.
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If infantile paralysis germs, discharged with body wastes, were spread by water or food, it would be expected that everyone who used the same water and food supplies would get the disease during epidemics. But they do not.

Another unsolved mystery is where does the virus go in the body of patients. Where do healthy carriers carry their germs? It is known that the virus travels along nerves, and that when it reaches the nerve cells in the brain and spinal cord it does its chief damage. But for all that is now known, the virus may invade other tissues of the body and hide itself there. Complete information on this point will be sought by examination of all the tissues of the bodies of patients who die of the disease.

If infantile paralysis virus travels from human wastes to contaminate water supplies, will chlorination make the water safe by killing the germs? Investigators believe it will, but when they began thinking about this, they realized that germ-killing chemicals, from carbolic acid, or phenol, down are tested by their power to kill germs that can be seen under the microscope, like the colon bacillus, but not against the invisible virus type of germ. This has led to another line of research, testing the virus-killing power of chemicals, which may help with the problem of infantile paralysis and of other virus-caused diseases.—JANE STAFFORD.

SERUM FOR ROCKY MOUNTAIN SPOTTED FEVER

(Copyright, 1940, by Science Service)

Serum that may prove a cure for dangerous Rocky Mountain spotted fever, the tick-borne disease that every summer threatens ranchers in the far West and suburbanites on the Eastern seaboard, has been made by Dr. Norman H. Topping, of the National Institute of Health of the U. S. Public Health Service.

The serum, so far used only on guinea pigs and monkeys, is "the first definite hope of a specific treatment for Rocky Mountain spotted fever." Guinea pigs and monkeys survived usually fatal doses of spotted fever virus when treated after they became sick with blood serum from rabbits that had been immunized to the virus. Details of the preparation of the serum are reported by Dr. Topping in the current issue of "Public Health Reports."

Public health officials hope the serum will prove as useful in treating human patients, but that cannot not be determined until more of the serum has been made. The federal health service has recently announced a new method of making a vaccine to protect against Rocky Mountain spotted fever. The advantage of this new vaccine over the old one is that it can be made on a large scale. The difficulty and danger of making the old vaccine limited the amount that could be made, and thus its usefulness.

Neither the vaccine nor the serum, however, is yet available for general use. Further tests must still be made with them.—JANE STAFFORD.

MEDICAL CARE

(Copyright, 1940, by Science Service)

A WARNING that we must now make haste in working out plans for better medical care distribution, to avoid having the problem become a political football, is issued by Dr. Hugh Cabot, of the Mayo Clinic, in his book, entitled "The Patient's Dilemma," published by Reynal and Hitchcock.

Dr. Cabot incidentally criticizes the American Medical Association for failing, in its handling of economic, social and political problems relating to medicine, to maintain its high standards and the judicial and judicial qualities which have characterized its handling of scientific problems. But Dr. Cabot's chief concern is in solving the patient's dilemma of being unable to find or to pay for good medical care.

The approaching presidential election makes speed essential, Dr. Cabot points out, if the problem of getting medical care to all the people is to be solved by sound plans. With large bodies of people convinced and certain to state clearly their convictions that some change in medical care distribution is overdue, "the time appears to me," Dr. Cabot says, "to be short during which good-tempered discussion can hold the floor. Once the issue is joined between the political parties, action—possibly hasty—may well result."

No formula for solving the problem exists. Disagreeing with proponents of compulsory health insurance, Dr. Cabot states that while there is "much foreign experience to guide our footsteps, there is no foreign formula which can be applied—even in its general principles."

"The entrance of government into the distribution of medical care," he continues, "must have as its first step a secure foundation in the provision of a good personnel, good standards and expert supervision."

Dr. Cabot seems to favor solving the problem largely at the state level. He says there is much to be gained by regarding the states "as a series of experimental laboratories." Local initiative, local financing with state grants-in-aid to communities needing it, a single state administrative channel and state maintenance of standards are the principles he suggests for plans for medical care under government auspices.

Establishment and maintenance of fundamental standards, however, in his opinion, can only be done by the Federal Government. The Federal Government should also be responsible for expert determination of the relative needs of various portions of the country, and he favors following the "well-established principle that the more prosperous portions of the country should give aid and assistance to their less prosperous neighbors."

A federal department of health with a secretary of health in the cabinet, often proposed, is viewed with some alarm by Dr. Cabot. While he favors a single agency to administer all problems in the field of education, research and medical care in which the Federal Government is involved, he thinks these problems should be combined under the U. S. Public Health Service, which in turn should be under some major department of government. This will insure the supremely important permanency of tenure, detachment of view and freedom from political influence which might be threatened by setting up a department of health with a secretary in the cabinet.

THE WHITE HOUSE CHILD CONFERENCE

Closing its reports and polishing off recommendations and plans, the White House Conference on Children in a
Democracy adjourned on January 20, leaving the country with advice that any pending nation-wide economy wave should not sweep over 36,000,000 children first.

In 21 pages of compressed terms, the conference set forth recommendations that groups and individual citizens throughout the country may use, if they will, to work for the welfare of the rising generation. Like three previous White House conferences held at approximately ten-year intervals, the work of this group of experts looks ahead for ten years.

Its recommendations include such items as:

- Large-scale slum clearance and low-cost housing under Federal leadership.
- Further development of aid to dependent children, enabling families that need this aid to provide adequate care.
- Legislation by state and city governments, to make it possible for them to cooperate with the Federal Government in housing programs.
- More effective school health education and supervision. Minimum wage standards for all employed minors.
- Abolition of industrial home work, which is seen as the only way of stopping children from doing such labor.
- Substantial financial assistance by every state to its local school system, to equalize tax burdens and give the children equal chances for schooling.
- Backing a long list of tersely worded improvements, reflecting present shortcomings as seen by physicians, teachers and welfare specialists, have been such outspoken statements to the conference as that by Professor C. E. A. Winslow, professor of public health at Yale University. He reported that while the United States has made encouraging progress in saving 40,000 infant lives each year in the past decade, and reducing deaths of mothers, the health of school children shows no such cheery picture.

"Even in our cities," said Professor Winslow, "more than a quarter of the children suffering from disease so serious as to disable them for a week or more receive neither medical nor hospital care of any kind. There is no economy in saving dollars at the cost of the lives and health of our children."

Professor Winslow advocated the passage of a National Health Bill and an appropriation for continuance of the housing program by the present Congress, and voiced approval of the proposal that a National Nutrition Committee be appointed by the President of the United States.—EMILY C. DAVIS.

ITEMS

COMpletely out of the news has been the extremely severe submarine earthquake which occurred about 350 miles off Guam, in the Pacific on January 16. The extremely severe shock in Turkey just after Christmas, with its terrific death toll now estimated in the 40,000's, made the newer Pacific quake seem light but, in reality, it was two thirds as severe as the Asia Minor shock. Epicenter of the Pacific earthquake was at latitude 17 degrees north, longitude 148 degrees east, according to the U. S. Coast and Geodetic Survey. Seismological observatories from Indo-China to Weston, Mass., and from Sitka, Alaska, to Tucson, Ariz., reported the quake.

WAR has cast a new shadow of danger over ships plying North Atlantic steamer lanes, by hampering the work of the International Ice Patrol. This patrol, which usually begins in late March, is conducted by special U. S. vessels but is internationally sponsored, and it depends for full efficiency on radio reports from merchant ships sighting icebergs. Now, to avoid being located by Nazi submarines, all British and French vessels, and many neutral ships as well, maintain complete radio silence. A statement in the Hydrographic Bulletin issued by the U. S. Navy Department takes cognizance of this situation, and requests that "In the interests of safety to shipping in general, the Hydrographic Office would appreciate receiving reports of ice sighted by such ships, immediately upon arrival in port."

AN American ship will be dropping depth charges in the North Atlantic for the next six weeks, but they will not have anything to do with the European war. The ship is the Atlantis, research vessel of the Woods Hole Oceanographic Institution. Her depth charges go clear to the bottom and explode there, setting up small earthquake-like waves which are picked up by specially constructed seismographs, also resting on the bottom. The records will give information regarding the nature and thickness of the rock layers that form the ocean bed. The method was invented by Dr. Maurice Ewing, of Lehigh University. Unlike the gray-painted or camouflaged warships, that are made as nearly invisible as possible, the Atlantis is painted white, purposely to make her conspicuous. The Bulletin of the Hydrographic Office, U. S. Navy, advises all shipping to give her a wide berth in order not to interfere with her scientific work.

Great canyons under the sea, extending many miles from shore, and sometimes reaching depths of more than two miles below sea level, still puzzle geologists, although recent findings, reported to the Geological Society of America, have considerably lessened the mystery of their formation. Once believed to be extensions of to-day's river valleys, cut during a time in the ice ages when sea level was lower than at present, these submarine canyons have been used as evidence of a very great lowering of sea level. Now, Drs. F. P. Shepard, of the University of Illinois, and H. T. Stetson, of the Massachusetts Institute of Technology, find that some of the canyons are not related to present valleys, that there is no good evidence of any two-mile lowering of sea level during the ice ages, when the cutting is believed to have taken place, and that the cutting took place earlier in the glacial period than has heretofore been believed. Tsunamis—great waves that originate on the sea floor—may have excavated these submarine canyons, in the opinion of Dr. Walter H. Bucher, of the University of Cincinnati, who shows that such cutting by these great waves—from fifteen to one hundred and twenty miles long—is certainly not physically impossible. Submarine earthquake disturbances, the cause of tsunamis, have been numerous in the Atlantic in geologically recent times, creating, among other features, changes in the submerged contours of the mid-Atlantic ridge, the rocky "centerboard" in the Atlantic basin.
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