GENERAL SCIENCE

Many More Scientists Now; Fewer Great Men of Science

THERE seem to be fewer great men of science now than there were 30 years ago, Dr. J. McKeen Cattell, editor of the journal, *Science,* concludes in a survey of the progress of the biographical directory of American men of science which he also edits. (*Science,* March 12.)

Not that the number of scientific workers in America has decreased, for the number of biographies has increased from 4,000 in the 1906 edition to a possible 30,000 or more in the sixth or 1938 edition.

But Dr. Cattell raises the question as to "whether scientific men as a group are now on the average less able or do less important work than formerly."

"They are less distinguished," he contends; "there may be as many leaders in a savage tribe as in a great nation. The saying 'we cannot see the forest for the trees' may be reversed to 'we can not see the trees for the forest.' "

The geometrical increase in the number of American workers in science is most promising for the future of our civilization, Dr. Cattell observes.

Dr. Cattell, also a distinguished psychologist, was led to first publish the directory because of his researches upon scientific men and the natural qualities and environmental conditions favorable to scientific research.

Science News Letter, March 27, 1937

BACTERIOLOGY

Ships May Get "Sick" Through Germ Attacks

BACTERIA may play a part in making ships "sick," researches of Dr. Claude E. ZoBell and Esther C. Allen of the Scripps Institution of Oceanography suggest. Dr. ZoBell and Miss Allen immersed sets of glass slides in the ocean and studied the first forms of life that adhered to them. The first "settlers" were always bacteria—as many as 4,500,000 to a square inch of glass in 24 hours.

Nothing would really stick to the glass unless it was submerged from two to four hours. Time is required for the bacteria to cement themselves to the glass, but once they do so running water will not dislodge them.

Larger forms of life, that can be seen without a microscope, did not appear on the slides until they had been submerged for more than three days. Barnacle larvae were occasionally found on slides submerged for a week, during the summer months.

The studies of Dr. ZoBell and Miss Allen suggest that the film of bacteria, which bulks up to as much as nine per cent of the total mass of the living foreign matter clinging to the hulls of ships, may aid larger plants and animals to attach themselves to submerged surfaces. Perhaps it serves as a natural adhesive, or it may possibly supply food during their early life stages. Possibly, too, it may serve as a protection against the various kinds of poison paint with which shipowners try to protect their property against these swarming submarine hitch-hikers.

Science News Letter, March 27, 1937

MEDICINE

Pneumatic Tube Delivers Radium "Bombs" from Safe

FIVE grams of radium, valued currently at some $200,000, is being blown back and forth in flexible tubes from its storage safe to the treatment table at the Radium Institute in London.

Improved protection for both patient and the scientist is the attained object of the new system. An equivalent of ten inches of lead now shields people from the radium except at the small opening through which the rays penetrate for treating malignant diseases, reports the British medical journal, *The Lancet* (Mar. 6).

The use of large units of radium, the so-called radium bombs, has been limited by inability to provide staff and patient protection. L. G. Grimmett, physicist at the Radium Beam Therapy Research of the Radium Institute, describes how the radium pack is sealed in monel metal tubes each containing 200 milligrams of the precious element and the whole group put in a steel bobbin. This bobbin is blown from the thick-walled storage safe to the treatment mechanism through a flexible tube by air pressure. A simple vacuum cleaner blower provides the necessary pressure.

Once in place in the holding mechanism a system of gears can rotate the steel radium container about both a vertical and a horizontal axis. Also by remote control the opening for the radium rays can be changed to allow different areas at different distances to be treated. Finally there is a special extra shield of lead which swings so that its thickest part lies between patient and the radium.

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IN SCIENC

AGRICULTURE

Western Wheat Bad Bet If Soil Not Moist In Spring

PLANTING wheat is a risky gamble in the Western dryland wheat region, unless the soil is moist enough for good germination at seeding time, warns the U. S. Department of Agriculture. Under such circumstances farmers will do better to fallow their fields for a season, unless they are planting some crop other than wheat.

This warning is based on 26 years of carefully conducted experiments at the Kansas Experiment Station, in which the State of Kansas collaborated with the Department of Agriculture. Where the soil was fallowed in each of five spring-drought years, and planted to wheat the following year, the yield after fallowing was more than what the combined yield of the two years would have been, had the oncoming drought been disregarded.

Science News Letter, March 27, 1937

MEDICINE

Germ-Killing Chemicals In Onions and Garlic

WEEPING over onions may soon be changed to cheering for this and its companion vegetable, garlic.

The very chemicals in onions and garlic which bring tears to the cook's eyes as she prepares the vegetables are now found to have germ-killing powers which may be useful in fighting disease. The germ-killing, tear-starting chemicals have been isolated for the first time by Dr. Richard E. Vollrath, professor of physics, and Dr. Carl C. Lindegren, chairman of the bacteriological department, at the University of Southern California.

The germ-killer from onions is allyl aldehyde, that from garlic is the less poisonous crotonic aldehyde. Tests are now under way to determine the usefulness of these substances in healing infectious diseases due to germs. The fact that onions do not spoil readily and have remarkable resistance to bacterial attack led to the present discovery.

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E FIELDS

BOTANY-ROENTGENOLOGY

New Glimpse of Lily's Beauty Won by X-Rays

See Front Cover

"TRANSPARENCY" is a beauty often praised in white lilies, though the term is always recognized to be of figurative rather than literal application. But it is made literally true by a skilled X-ray artist, Miss Francis Mildred Davis, of Santa Monica, Calif. Arrangement of flower parts, even within the unopened buds, and the delicate veining of leaves and petals, are all brought out on her film.

Science News Letter, March 27, 1937

PSYCHOLOGY

Every Normal Youngster Is a "Problem Child"

EVERY child is a problem child at some stage of his young life but most children outgrow being problems in behavior as they outgrow their clothes. Parents should be comforted by this thought and psychiatrists, especially those dealing with children, should be guided by it, Dr. Edgar A. Doll, Director of the Training School at Vineland, N. J., pointed out in his presidential address before the American Orthopsychiatric Association meeting in New York.

It is normal for children to be problems—to tell lies or to resist discipline—because the average child does such things at a certain stage in his development. Parents should adopt a policy of "watchful waiting" over such problems. If the child does not outgrow the condition, the aid of the psychiatrist should be sought. Psychiatrists themselves, Dr. Doll cautioned, should remember this "normal abnormality" exists and plan their treatment of the child so as not to fix his attention on his abnormal behavior to such an extent that he cannot forget it.

Caution is necessary in planning the lives of children, Dr. Doll continued, especially considering the difficulties adults have in planning their own lives successfully.

"Nowhere is man's feebleness more evident than when he undertakes to say what the world should be like. These are great days for the planned society. Are we equal to the task?" Dr. Doll questioned. "In modern terms, what is social security? Do we want it even if we can have it?

"Yet here again we need not be fatalistic or negative. Civilization grows and develops just as the child does. These social changes require accommodation and adjustment on the part of ourselves and our children. Some of these outcomes are fairly evident in the circumstances and cooperation with the inevitable may be a virtue not to be lightly disregarded."

Science News Letter, March 27, 1937

GEOLOGY

Collecting Meteorites Is Hobby of a Biologist

A COLLEGE professor whose hobby of collecting meteorites turned out to be his major task in life has given the city of Denver one of the world's largest and most complete collections of these visitors from outer space.

Prof. H. H. Nininger, trained as a biologist but now curator of meteorites at the Colorado Museum of Natural History, struggled for seven years while teaching at McPherson College, Kansas, to persuade science that a systematic survey of the fall of meteorites over wide sections of the earth would be useful.

Finally in 1930 he gave up his college teaching and concentrated on the plan. Today some 60,000 square miles of the midwestern plains have been probed for these outer space visitors to the earth. Scientists attending the coming summer meeting of the American Association for the Advancement of Science in Denver will view the great meteorite collection on display at the museum.

Among the outstanding meteorites to be exhibited is the largest one of iron that has yet been taken from the famous Meteor Crater near Winslow, Arizona, where in prehistoric times a giant hole was dug in the earth by an impacting meteor. Also there is the renowned Bruno meteorite from Canada which clearly shows on its surface the conflict of this meteorite with the earth's atmosphere as it plunged to earth. Finally there will be shown the model of the only meteor crater ever completely excavated, the crater near Haviland, Kansas, studied by Prof. Nininger in 1933.

Science News Letter, March 27, 1937

MEDICINE

Medicine Man Got Results; He Treated Simpler Ills

PHYSICIANS and laymen alike in this age of science are generally scornful of the medicine man, witch doctor or shaman of primitive society. Yet the record of "cures" of the medicine man puts the modern scientific physician to shame, it is pointed out in the current bulletin of the Associates in the Science of Society at Yale University.

The medicine man was a creature of superstition but he got results. He cured his patients.

"Careful examination of the cases," states the bulletin, "gives the distinct impression that the shaman's record of cures was, if anything, better than that of the modern physician."

The explanation of this apparent paradox is simple. The shaman or medicine man almost never had to deal with the incurable, degenerative diseases that the modern physician treats. Cancer, heart disease, hardening of the arteries are the chief causes of death today but these diseases do not appear until middle or old age. In primitive society very few people live long enough to be afflicted with these conditions. Primitive man is or was usually killed in warfare or by accident in the prime of his life.

The medicine man rarely saw a case of cancer or hardening of the arteries and he rarely attended childbirth. Deaths of infants and mothers in childbirth, consequently, are not charged up against him as they are against the modern physician.

Communicable diseases, such as yellow fever, bubonic plague and even influenza, were not generally a problem for the primitive medicine man. Communicable diseases are spread by travel and primitive man did not travel much compared with modern man.

The medicine man's big success was due to the twin facts that he dealt largely with social or psychological problems and that he was peculiarly well equipped to deal with just such problems and the ailments that arise from them. He used the terms of witchcraft instead of psychiatry and psychoanalysis, but he knew his patients and their background, he had insight into their problems, and he had their complete confidence. In this last respect, it is pointed out, the medicine man of primitive society enjoyed an important advantage over the family physician.

Science News Letter, March 27, 1937