

less or necessary bacteria, as opposed to only 308 thousand trillion harmful ones.

These staggering figures may be compared with good and bad people. One out of every 17,000 humans is detrimental to the public welfare, whereas only one out of 30,000 bacteria is harmful in this country.

For centuries bacteria have aided man in the preparation of foods, such as cheese, beer, wine, sauerkraut, pickles and many others. New applications have increased productivity of many industries.

Cocoa and chocolate, tobacco, leathers, vinegar and acids are all produced by bacterial action. Coffee berries are fermented to set the beans free. Linen, hemp and jute are produced using these helpers.

In fact, much of the basic existence of life is affected by these tiny plants. Yet, only about 2,000 species have been identified, and even these are being reduced by reclassification.

Bacteria must be magnified nearly 1,000 times to be seen. Only with the advent of the electron microscope have their tiny features been recognized.

These organisms have three general

shapes: balls, or cocci; rods, known as bacilli; and corkscrews, called spirilla. The cocci may form grapelike bunches, or staphylococci, or they may appear as strands, called streptococci.

Some have hair-like flagella, as the harmless *Spirillum volutans* found in stagnant water. These flagella aid the organism to swim or move.

Bacteria often have diseases, caused by the tiny viruses which attach themselves by their tails.

Not all bacteria are helpful or harmless. Some cause diseases ranging from pneumonia to bubonic plague, including syphilis, scarlet fever and dysentery.

But it should be remembered that good and useful bacteria far outnumber the bad ones. All germs and all bacteria are not harmful. In fact, without them, all life would cease to exist.

Scientists are now finding more and better ways to put microorganisms to work and benefit mankind. Thus, these microbes of merit will continue to serve men and nature.

• Science News Letter, 81:234 April 14, 1962

MEDICINE

Doctors Are Reading—

► IF CANCER cannot be cured, many cases can be prevented, physicians read in their official Journal of the American Medical Association, 179:1001, 1962.

More than 1,400 physicians, mostly in Wisconsin, have been asked their opinions about 40 possible measures to prevent cancer. The majority agreed that preventive measures such as surgery on polyps, nodules and premalignant lesions would be best method.

Laboratory or experimental discoveries about causes of cancer were rated lower. These experimental findings include studies on air pollution, food additives, industrial causes and tobacco.

Less acceptable to the doctors were other measures suggested, such as circumcision and protection from sunlight.

The originator of the poll, Dr. Robert J. Samp of the University of Wisconsin Medical Center, Madison, reports that much work on reform of present practice would have to begin with the doctors themselves.

Personal considerations entered into the answers, Dr. Samp says. About two-thirds of the doctors questioned in four county medical societies were estimated to be regular smokers.

Simple Cancer Test

Another article describes a simple test that may enable doctors to solve the difficult problem of differentiating benign from malignant stomach disorders.

The test is based on a recent finding that administration of the drug tetracycline by mouth results in fluorescent material from the stomach contents of patients with cancer of this organ, but no fluorescence appears in those without cancer.

Drs. J. Edward Berk and Sheldon M. Kantor of Wayne State University College

of Medicine, Detroit, state that the test was positive if a bright yellow glow appeared in the stomach contents removed from the patient, then processed and viewed under an ultraviolet lamp (p. 997).

Rare Cancer Operation

A rare case of a Mexican boy who at the age of 15 underwent total colon operation for cancer is reported by Drs. Edward S. Murphy, Mario Mireles and Arturo Beltran of Mexico, D. F.

Stomach cancer followed the colectomy, and the investigators related the carcinoma to hereditary factors (p. 1026).

Syphilis Test Can Be Inaccurate

Reactions indicating falsely that syphilis is present rarely occur in tests for syphilis, a questioner is told in the questions and answers page, but almost any disease of the central nervous system is potentially capable of causing such a reaction. Technical errors in the laboratory also can occur, which may be indicated by a weakly reactive blood test (p. 1034).

• Science News Letter, 81:235 April 14, 1962

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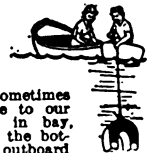


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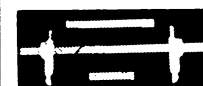
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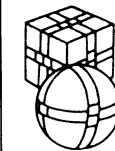


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