

PATHOLOGY

Q Fever Goes Down Drain And Infects Lab Workers

► Q FEVER came out of a drainpipe to infect workers at the University of Cambridge, Dr. M. G. P. Stoker, pathology department, reported in the *British Medical Journal* (Feb. 23).

Q fever, originally called "Query fever," is an illness that brings with it high fever, headaches, and pneumonia-like symptoms. It is caused by microorganisms called *Rickettsia burneti* but is rarely fatal.

The cause of the infection was a blocked drainpipe in a third floor "Q fever laboratory" where research on the illness was being carried on.

To clear the drain, the main pipe had to be opened on the first floor, and a flood of black sludge oozed onto the floor there. Two interested spectators that watched the cleaning process came down with the fever several weeks later.

Although there is nothing very original about Q fever being contracted in the laboratory, these infections were by a route that the highly versatile organisms had not previously succeeded in exploiting, Dr. Stoker reported.

No live organisms had been deliberately poured down the sink since all infected glassware and equipment were either autoclaved or washed in Lysol. But the Lysol probably did not penetrate through all the waste egg yolk material used to grow the organisms, he reported.

"Once in the drain the Lysol would rapidly be diluted out, and surviving organisms might remain embedded in the sludge for many months," he said.

Science News Letter, March 9, 1957

PALEONTOLOGY

Find Fossil Footprints Left 1,100 Years Ago

► FOOTPRINTS left by four adults and one child in the sand of El Salvador are reported in *American Antiquity* (Jan.), by Drs. Wolfgang Haberland and Willi-Herbert Grebe of the Ethnological Museum of Hamburg and Geological Institute, Hamburg, Germany.

The interesting thing about these footprints that makes them worthy of a report in a scientific journal is that the individuals who left them were walking that way at least 1,100 years ago. The German scientists arrived at an estimate of between A.D. 200 and 800 as the time the footprints were formed.

What was then soft, gooey sand is now hard rock, and the fossil footprints were found by the scientists a yard and a half below the surface in a steep bank beside a road.

The German scientists were led to the site when, while making a geological and archaeological survey near the Rio Lempa in El Salvador, they heard of the discovery

of some "footprints in stone" on the hacienda La Carrera.

They visited the hacienda and saw the slab containing the human footprint which was about 12 inches long, and two different animal tracks, the larger one of which measured nearly four inches in diameter and belonged to the cat family.

One of the workmen who originally found the tracks showed them the spot where they were discovered during the construction of a farm road. The scientists went with him to the spot and made new cuts in the steep banks of the road, finding the new set of fossil prints.

Dating was done from a combination of geological evidence and finds of remains of pottery in the vicinity.

Science News Letter, March 9, 1957

GEOLOGY

Locate Ore Bodies by Testing Rock "Halos"

"HALOS" within the earth may provide science with its newest prospecting tool.

A description of how the halos, shaped by streams of liquid materials over 250,000,000 years ago, may be used to find hidden mineral deposits was given by Dr. A. E. J. Engel, geologist, and Dr. Samuel Epstein and Robert N. Clayton, geochemists, of the California Institute of Technology, Pasadena, Calif.

The research team, after a two-year field and laboratory study supported by the U. S. Geological Survey, reported that the location of underground ore is indicated by variations in oxygen isotope ratios in surrounding rock.

The scientists explained that some of the greatest base metal deposits in the world were formed when hot fluids, carrying ores with them, forced their way into carbonate rock formations such as limestone and dolomite. The fluids permeated outward, heating the rocks around for an area 10 to 20 times the original size and causing chemical changes in the rock. These areas are known as alteration halos.

Using a special mass spectrometer on samples gathered from the Leadville limestone of Colorado, a sedimentary formation containing some of the nation's richest silver, lead and zinc deposits, the scientists could measure the addition or deletion of one unit of oxygen eighteen in 2,000,000 units of ordinary oxygen.

This test, for the isotopic composition of the halo rocks, showed that the oxygen isotope composition of the halo samples depended upon the extent to which they had been permeated and heated at the time of the original intrusion.

Using the oxygen isotope ratios may enable geologists to pinpoint underground ore deposits, the scientists conclude. In effect, they have devised a geochemical thermometer capable of taking temperatures as they existed millions of years ago.

Science News Letter, March 9, 1957



MEDICINE

Report Disease Like Scarlet Fever

► A DISEASE that has all the symptoms of scarlet fever, but is not caused by the same germ and is not as serious, is reported by Dr. Mary D. Ames, a Harrisburg, Pa., pediatrician, in the *Journal of Diseases of Children* (Feb.).

The same fever, sore throat, and generalized bright red rash were caused by the disease as they would have been by scarlet fever, but no *Streptococci*, the germs responsible for scarlet fever, were found in the throats of the patients. Also, there was no scaling of the skin, Dr. Ames says.

The rash appeared within 12 to 48 hours after the abrupt appearance of the other symptoms. It covered the entire body and was particularly marked on the groins and back of the trunk. In scarlet fever, the rash begins on the neck and later appears on the trunk and groins, the physician states.

Thirty cases of the apparently new disease were seen at the State Hospital for Crippled Children, Elizabethtown, Pa., from November, 1955, to April, 1956. Three times as many females as males got the disease and no medicine could stop the course of the illness, which usually lasted three days, Dr. Ames reports.

It is important to distinguish between this new disease and scarlet fever because of the hardships that would follow wrong diagnosis, the pediatrician points out. For scarlet fever, the patient must be quarantined for at least seven days and, in Pennsylvania, other persons living on the premises cannot handle food or tobacco and may be cut off from necessary income, she concludes.

Science News Letter, March 9, 1957

PALEONTOLOGY

Fossil Relative of Horses Found in Wyoming

► PARTS of a fossil animal described as a "missing link" in the evolution of modern mammals has been found in Wyoming, C. Lewis Gazin, curator of vertebrate paleontology at the Smithsonian Institution in Washington, reported.

A fossil jaw and parts of a skull of the animal, called *Dilophodon*, were found in the Wind River basin, an area rich in fossil treasure. The *Dilophodon*, about the size of a fox when it roamed the West 45,000,000 years ago, is said to be a creature that branched off from the great family of odd-toed ungulates, which includes the horse and rhino, toward the present tapir.

Science News Letter, March 9, 1957

CE FIELDS

MEDICINE

Monkey Lungs Used to Breathe for Heart Cases

► MONKEY LUNGS have been used to breathe for human patients undergoing heart surgery, Drs. W. T. Mustard and J. A. Thomson of the Hospital for Sick Children, University of Toronto, reported in the *Canadian Medical Association Journal* (Feb. 15).

The lungs were removed from the monkeys and became part of a mechanical heart-lung machine which takes over the job of breathing and pumping blood. While the machine does its work, the human heart is allowed to rest and surgeons are able to open it up and perform the necessary repairs.

Since 1951, 21 human patients have had these monkey lungs breathing for them temporarily, but most of them were critically ill infants with serious heart defects. Only three of them survived the operation.

Various other methods have been used to perform the lungs' job of supplying oxygen to the blood. They include many types of completely mechanical devices as well as the use of animal lungs that have been removed from dogs.

Science News Letter, March 9, 1957

NUTRITION

Poor Nutrition Not Caused by Food Dislikes

► STRONG DISLIKES for certain foods are not generally responsible for poor nutrition, Dr. Charlotte M. Young and Therese D. Lafortune of the School of Nutrition at Cornell University, Ithaca, N. Y., report.

Many explanations have been given for the fact that some people are less well fed than might be desired, they state. One frequently given is that foods disliked by an individual eater will be passed up and therefore cause him to have an inadequate diet.

The nutritionists studied the influence of these food dislikes on 81 freshman college girls for a one-week period. They found that the dislikes had little effect on how adequate the girls' diets were. The main reason for this, they discovered, was that the most intensely disliked foods were usually "seldom served" food items.

In general, religious food restrictions did not make the diet inadequate, nor did "dieting" restrictions, considered on a mass basis. But this was not true in individual cases, they report.

Too little an intake of such "choice" food items as milk, bread, cereal and eggs was the main cause of poor nutrition. Yet these

foods were rarely mentioned as being strongly disliked.

"We are not dealing with food dislikes, but rather with food indifference or misinformation," they say in the *Journal of the American Dietetic Association* (Feb.).

The solution to the problem seems to be an educational program aimed, not at combating food dislikes, but rather at emphasizing the importance of certain "choice" foods and at sound weight control information, they conclude.

Science News Letter, March 9, 1957

MEDICINE

Indifference to Upset Stomach Leads to Ulcers

► INDIFFERENCE to the early signs of recurring stomach distress, such as "indigestion," belching, and episodes of gnawing, account for a great number of peptic ulcer operations, Drs. Hesiquoi N. Gonzales and Philip S. Kline, Santa Rosa and Baptist Memorial Hospitals, San Antonio, Texas, told the International College of Surgeons meeting in Mexico City.

"Present day life, with its fast pace and wear and tear on the nervous system, is responsible for the common occurrence of peptic ulcers—lesions on the wall of the stomach or duodenum, the first part of the intestine," they reported.

Because human nature is as it is, ulcer patients see their doctor only when the ulcer has progressed and involved certain layers of the stomach and duodenal wall. The nerves there cause intractable pains, with vomiting, "burning" and, in severe cases, bleeding and perforation.

If these individuals could be seen in the early stage of the disease, they could get prompt treatment and not have to undergo surgery, the physicians reported.

The difficult part of treatment is getting the individual to accept a sedate type of living that includes both physical and mental relaxation, they said.

Science News Letter, March 9, 1957

ENGINEERING

Midget "Brain" Size Of 27-Inch TV Set

► AN ELECTRONIC "BRAIN," the size of a 27-inch television set, has been developed for the Air Force Air Research and Development Command, Baltimore, Md. The midget computer is transportable and can add, subtract, multiply and divide 1,000 times faster than the conventional desk calculator.

Called RECOMP by its developer, Autonetics, a division of North American Aviation, Inc., the computer weighs only 200 pounds and, when plugged in, operates on less current than needed for the household toaster. The all-transistor digital computer is already in use at ARDC's Rome Air Development Center, Rome, N. Y.

Science News Letter, March 9, 1957

ZOOLOGY

Worker Ants Give Wide Berth to Dead Brothers

► AFRICAN WORKER ANTS encountering the dead body of another worker of the same species flee in panic from the spot, J. H. Sudd of the zoology department, University College, Ibadan, Nigeria, reports in *Nature* (Feb. 23).

The ants will approach to within about a half inch from the body of another crushed worker, stop short, briefly wiggle their antennae in the air or over the dead ant's body, and then turn and run away, he states.

The actual presence of the body was not necessary to bring about the panicked reaction, the zoologist found. The same thing happened when an ant approached the spot from which a dead worker had been removed, even if the ant was from another colony.

The panicked reaction was quite different from that which occurs when the trail is destroyed, he says. If a strip of cellulose tape is placed across the trail, the ants will collect at either side of it and eventually cross it, but they never flee or in any way avoid the tape.

Field observations suggest that the response "serves to protect the colony against loss of workers to predators, in particular, other species of ants, by preventing trails from forming or persisting in 'known' dangerous places, where a worker has been killed," he concludes.

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MEDICINE

Radiation Exposure Steps Up Blood Production

► AFTER the whole body has been exposed to radiation, the bone marrow starts working "overtime" to produce new blood.

This has been indicated in research at the University of California at Los Angeles Atomic Energy Project by Dr. Thomas Hennessy and James OKunewick.

Rats were given a relatively moderate dose of whole-body irradiation and then were injected with radioactive iron periodically for 33 days. The rate of uptake of radioiron was measured. This gave an indication of the rate of formation of red blood cells by the bone marrow. The hemoglobin of the cell, which gives blood its color, is an iron-rich pigment.

An initial depression of marrow activity took place immediately following irradiation. But within four days there was a rapid rise in iron incorporation to well above normal. Marrow activity returned to normal in eight or nine days following the irradiation.

"These findings show the body's efficiency," Dr. Hennessy points out. "The bone marrow has to step up production of red blood cells to above normal to meet shortages developed in the initial diminished production rate resulting from irradiation."

Science News Letter, March 9, 1957