

GENETICS-CHEMISTRY

Heredity Chemical Found

Desoxyribonucleic acid now known positively to be constituent of genes. Male sex cells contain only half as much as other cells of same animal.

➤ ONE of the chemical foundation stones of inheritance has been discovered. It is a chemical with a long name, desoxyribonucleic acid. It is found in the nuclei of cells. Scientists have suspected, without being sure, that it also was present in genes. These are the tiny cell bodies that carry inherited characteristics such as eye and hair color which just had their "pictures" taken for the first time.

Now, for the first time, it has been shown positively that this chemical is a constituent of genes. The discovery, which it is said "may well prove a significant advance toward solution of the secret of life itself," was made by Dr. A. E. Mirsky of the Rockefeller Institute for Medical Research. He reported his studies at a sectional meeting of the American Chemical Society in New York.

Dr. Mirsky made his discovery through studies of pure chromosomes. These are the slender rodlike bodies in the nuclei of living cells which contain the genes.

All cells contain two sets of genes, except the sex cells. These reproductive cells each have only one set of genes. And purified chromosomes of the male cells, Dr. Mirsky found, contain only half as much desoxyribonucleic acid as other cells of the

same animal. This proves that the chemical is a constituent of the genes, he said. The long-named acid, however, is probably not the only chemical in genes, though no other compound has yet been identified.

The quantity of the chemical is identical for each cell in a given animal species, although it may vary from one species to another. Different types of cells, because they vary in weight, contain different proportions of the chemical, but the absolute amount is fixed for any animal species.

Genes, besides their part in inheritance, are known to play an important role in the life processes of cells, Dr. Mirsky pointed out. They are thought by some scientists to serve as master die patterns for enzymes. These are complex biological compounds which control all the body's chemical activity.

The "pictures" of genes recently unveiled to the world of science were not actually photographs but electron micrographs. And the scientists at the University of Southern California who "shot" the genes with an electron microscope are not positive that what they saw really consisted of genes. But they think it "reasonable" to believe they are genes. (See SNL, Jan. 29).

Science News Letter, February 5, 1949



"LIGHT PIPE"—A plastic "light pipe", flexible as a garden hose, can be used to guide a bright beam of light around corners and into hidden nooks and crannies.

BIOLOGY

Cockroaches Found to Harbor Food Poison

➤ COCKROACHES, man's pestiferous companions for perhaps millions of years, have for a half century or so been suspected of spreading disease. Now scientists are beginning to get some definite proof for this suspicion.

In laboratory tests, cockroaches will harbor one kind of the food-poisoning germs, called Salmonella, for several days, Dr. Theodore A. Olson of the University of Minnesota School of Public Health reported at a milk and food sanitation symposium held in Washington, D. C. under the auspices of the U. S. National Institutes of Health.

If the roaches deposit their excreta on food or dishes in the pantry, the food-poisoning Salmonella will remain alive for a month or so, the laboratory studies showed.

Carbonated beverage bottles will also carry their share of disease germs on their outsides if kept in water coolers into which many hands dip to pull out a bottle. Drinking from the bottle, of course, gets these germs into the drinker's system.

But the bottles can be kept as germ-free on the outside as the contents are when they leave the manufacturer. All that is needed is a weekly change of the water in the cooler plus the addition once a week of suitable sanitizing agents, Irving Olitsky, graduate fellow at Michigan State College, reported.

Quarternary ammonium compounds and chloramine T are the type of sanitizing agents he recommended, on the basis of his studies, to the American Bottlers of Carbonated Beverages.

Science News Letter, February 5, 1949

MEDICINE

Staples Prevent Limping

Made of stainless steel, and less than an inch long, they are driven into bone bridging growth zone. May correct knock knees or bow legs.

➤ STAINLESS steel staples less than an inch long are the latest medical tool for helping polio-damaged and other crippled children walk normally.

They were demonstrated in Chicago by Drs. Walter P. Blount, Donald W. McCormick and George Clarke, of Milwaukee, at the exhibits of the American Academy of Orthopaedic Surgeons.

One use of the staples is to keep a child from limping all his life on one short and one long leg. Another is to correct knock-knee. Bow leg, the back-knee deformity of infantile paralysis and the bent knee following arthritis or injury can also be corrected by the staples.

Through a small cut the staples are driven into the bone, bridging the growth zone. This mechanically stops the leg from lengthening at one of several levels of

growth. For knock-knee the staples are placed on the inner side of the knee. For correcting bow legs they are placed on the outer side.

The child can return to school a few days after the operation, but he is closely watched to see how he walks and X-ray pictures are taken at intervals to measure the length of the legs.

When the deformity has been corrected, the staples are taken out and growth of the bone starts up again.

The child must be treated while he still has two or more years to grow, the Milwaukee doctors pointed out. The method can be used in children as young as eight years. The reversibility of retentive force is said to be a revolutionary feature of the method.

Science News Letter, February 5, 1949