GENERAL SCIENCE

Winning Science Projects

Four top winners, two in the physical sciences and two in the biological sciences, are awarded their "wish-list" prizes at the Fourth National Science Fair.

➤ A SIMPLIFIED way of dyeing Orlon, a homemade planetarium, a study of bees and research on rabbits captured first prizes for two boys and two girls from Virginia, Tennessee, North Dakota and Indiana at the Fourth National Science Fair held in Oak Ridge, Tenn. (See SNL, May 16, p. 381.)

The projects displayed at the fair amazed experts called in to pick the best exhibits. After five hours of deliberation, the judges, some of them world-famous scientists, announced a tie in second place awards.

First prizes, consisting of $125 in scientific equipment desired by the winner, were awarded to the top boy and girl in each of the two exhibit classifications: physical sciences and biological sciences.

Doris Jean Hermes, 17, Martinsville (Va.) High School, took top honors for her simplified method of dyeing the synthetic, Orlon. She considers her method so successful that she has applied for a patent to protect it. She has studied problems related to the dyeing of Orlon for about 18 months.

John D. Rather, Jr., 15-year-old cadet at The McCallie School, Chattanooga, Tenn., also captured a first place award for his home projection planetarium. The planetarium's dome was too large to be included in the exhibit, but the projectors apparently pleased the judges' eyes. The youthful scientist used two projectors, one to show stars and the other to show sun, moon and planets.

First place award to a girl in the biological exhibits went to 17-year-old Patricia Ann Kirchoffner of Devils Lake, N. D. Her exhibit, titled "The Wax Workers," showed the importance of the honeybee, its honey and beeswax in everyday life. Part of her display showed actual bees at work.

The first place award to a boy in the biological science exhibits was taken by David Michael Young, 17, of Bluffton, Ind. In an "X-Ray Observation of Vesico-Ureteral Regurgitation in the Male Rabbit," the 17-year-old high school senior exhibited results of his tests on 21 male rabbits to determine the pressure at which vesico-ureteral regurgitation occurs. A summary of his findings said in part: "The occurrence of this phenomenon may account for many cases of renal infection both in the experimental animals and in the human."

Competition was so tough in the fair that the judges were forced to award six second-place prizes instead of the conventional four. The prizes, each totaling $75 worth of scientific equipment desired by the winner, went to:

Carolyn Evans, 17, Martinsville (Va.) High School for her exhibit showing methods she devised for proper dishwashing, and means of detecting improper dishwashing.

Larry Collins, 17, Classen Senior High School, Oklahoma City, Okla., for his homemade equipment demonstrating the mechanical CBS color television system.

Albert C. Petersen, Jr., 17, Farmington (Conn.) High School, for his exhibit that shows the whole process of converting ore into iron and steel.

Stewart Tanner Traill, 17, Fountain Hill High School, Bethlehem, Pa., for his exhibit of a small, homemade cyclotron that actually works. The whole cyclotron was not shown because parts of it were too heavy to ship to Oak Ridge conveniently.

Peggy Lenderking, 16, Martinsville (Va.) High School, for her exhibit which shows how dandelions can be substituted for tobacco in cigarettes.

Travis Elton Stubblefield, 17, Denton (Texas) Senior High School, for his exhibit of cancers common to tropical fish. His exhibit was illustrated by color movies with synchronized sound.

Third place awards of $50 in "wish-list" equipment went to:

SCIENCE FAIR WINNERS—Patricia Ann Kirchoffner shows "The Wax Workers" (upper left); David Michael Young demonstrates the results of his tests on rabbits (upper right); Doris Jean Hermes shows her exhibit illustrating a simplified way of dyeing Orlon (lower left), and John D. Rather, Jr., demonstrates his projectors for a planetarium. These young scientists were the four top winners at the Fourth National Science Fair held in Oak Ridge, Tenn.

Claire G. Vilandre, 18, Notre Dame High School, Central Falls, R. I., for her exhibit "Chromatography and Uses of Natural Flowers."

Jasper Ivan Rhode, 18, Jefferson High School, Lafayette, Ind., for his exhibit "Diffraction and Interference of Light."

Martial Leon Thiebaux, Jr., 16, Whittier (Calif.) High School for his exhibit of a Newtonian telescope.

Douglass Gray Saunders, 15, Oak Ridge (Tenn.) High School, for his photographic studies of radioactive substances in animal tissues.

Dr. Clarence E. Larson, Director of Oak Ridge National Laboratory and Chairman of the Board of Judges, said:

"All of the judges were surprised to see the high degree of scientific maturity which the exhibits expressed. Not only did the exhibitors manifest a command of the fundamentals but exhibited unusual ingenuity in the construction of their projects.

"The exhibits were of such high caliber that the selection of the winners was extremely difficult. After five hours of deliberation, the judges were still unable to break the tie for second awards so additional prizes were made available.

"These were made available by Union Carbide and Carbon Corporation which is serving as co-sponsor for the Fourth National Science Fair."

Other sponsors included Science Clubs of America, administered by SCIENCE SERVICE, local newspapers, technical societies, educational institutions, industries and the Oak Ridge Institute of Nuclear Studies.

Details on next year's fair, to be held at Purdue University, May 13-15, can be obtained from SCA, 1719 N St., N.W., Washington 6, D. C.

Science News Letter, May 23, 1953

ELECTRONICS

Small Gobs Disrupt TV in Fringe Areas

➤ TELEVISION PICTURES in fringe areas are disrupted by small gobs, or air eddies, in the atmosphere. These eddies, about a thousand feet in diameter, scatter the wavelengths used in TV.

The air clumps differ from surrounding air in temperature and amount of moisture. Dr. H. E. Bussey and George Birnbaum of the National Bureau of Standards and R. E. Katz of the Naval Research Laboratory report they have measured such air gobs at heights up to 10,000 feet.

The clumps are spotted by measuring at the same time the moisture, wind speed, temperature and refractive index of air. Although the air seems to be pretty much the same throughout, these invisible "dielectric eddies" actually change the way in which short wavelengths are transmitted. Normal radio waves are apparently not affected by these clumps because they are much too long.

Science News Letter, May 23, 1953

ENTOMOLOGY

Protection From Insects

Onset of insect season suggests use of insect repellents. Care should be taken in applying them to the body and to clothes, however, the U. S. Department of Agriculture warns.

➤ CHIGGERS, GNATS, mosquitoes and ticks will soon be making life miserable for the gardener, picnicker and camper. But you can protect yourself against this discomfort by using a good insect repellent.

Do not confuse repellents with insecticides. Repellents are applied to your skin or clothing to keep insects off; insecticides are used in the garden or elsewhere to kill insects, explains the U.S. Department of Agriculture.

Repellent preparations, usually in liquid, lotion or "cream" form, sell at drug, hardware or even grocery stores under different trade names. Among the most satisfactory chemicals as repellents are dimethyl carbate, dimethyl phthalate, ethyl-hexanediol and indalone. (The container usually lists the names of the chemicals in the repellent preparation.) Unlike some of the older repellents, the substances listed above have little or no odor and give protection from insects for several hours.

Repellents for mosquitoes, flies and gnats work best when they are applied directly to the skin and uniformly rubbed on the exposed areas. They should be renewed after two or three hours. They are safe for use on the skin except where there are skin abrasions or where the skin is particularly tender, such as the eyelids.

Do not apply repellents too liberally to your forehead, as they cause a temporary, but rather severe, stinging if they get into your eyes. Repellents are oily materials and will feel somewhat sticky on your skin for a few minutes after application.

For protection from chiggers and ticks apply repellent to your clothing but not to your "Sunday-best." The chemicals are likely to spot or stain clothing and may damage synthetic fibers such as rayon or nylon. Likewise, plastics, paints, varnishes and fingernail polish can be damaged by repellents.

A few drops of repellent daubed around the top of your shoes and on your socks will give considerable protection. And applying the repellent to all the openings of clothing—waistbands, cuffs, collars—is very effective.

Cotton or wool clothing if it contains no synthetic fibers, can be sprayed or dipped in emulsions of the repellent and will effectively prevent chigger attack between washings.

Science News Letter, May 23, 1953

ZOOLOGY

Reappearing Animals

➤ ALL THE man-shy creatures of the earth, like the retiring coelacanth—discovered in 1939 after 50,000,000 years of hiding, then rediscovered last December—do not have to skulk on the sea bottom to avoid man's curious eyes.

In fact, says the International Union for the Protection of Nature, there is a long list of good-sized animals prowling about on earth that seem to appear and disappear in a most perplexing manner.

The massive gorilla makes a good example. The ancient Greeks and Romans probably knew about gorillas, because their stories describe them. But then gorillas seemed to have dropped from the sight of civilized man, and were not rediscovered until 1847.

The golden hamster, reported in Syria in 1839, was not seen there again until 1930. A case nearer home is the rodent, *Plagiodontia aedium*, of San Domingo. It was recorded on the island in 1836 and did not turn up again until 1948.

The Schomburghk's deer of northern Siam and Yunnan, standing about 41 inches tall, has never been seen in the wilds by Europeans. It would probably still be unknown to science if the natives, prizing the antlers for their "medicinal powers," had not sold them on the Siamese markets where scientists saw them. Only one complete mounted specimen of this deer has been obtained.

Science News Letter, May 23, 1953

INVENTION

Patent Device to Hold Baby's Nursing Bottle

➤ A FRAME, with triangular-shaped supports and a bar between, holds a baby's nursing bottle in an invention recently patented. A clip which holds the bottle in the correct position is attached to the bar. The frame is placed across the baby so the bottle dangles into his mouth. Wingate Battle, Atlantic Beach, Fla., received patent 2,638,296. He assigned 20% to John E. Veith, Arlington, Va., and 20% to Norman R. Bronie, St. Petersburg, Fla.

Science News Letter, May 23, 1953