cies of American birds in vivid natural hues. These pictures were the best bird representations in existence then and for a long time afterward.

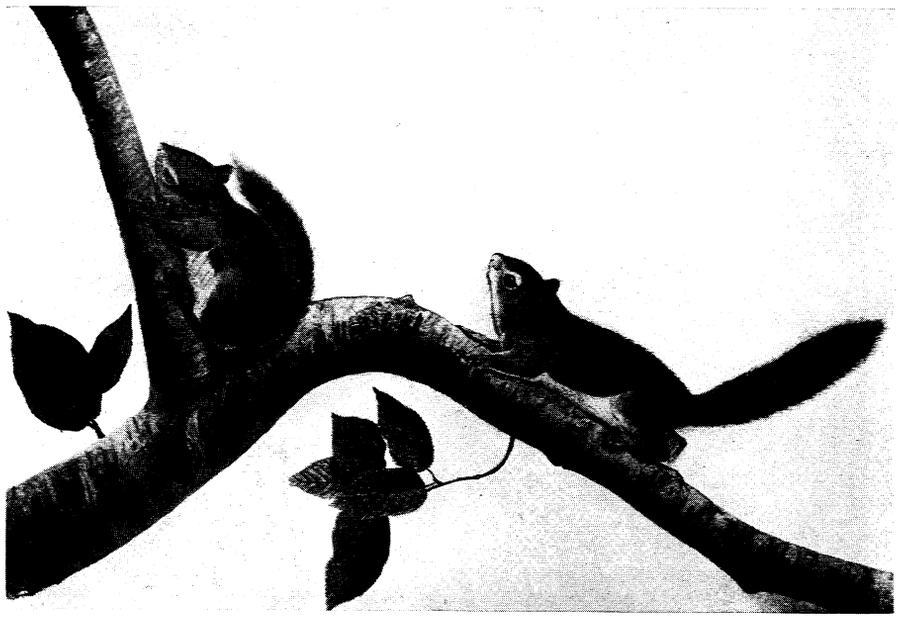
Audubon not only brought high artistic ability to his work; for the first time he showed birds as they are in the wild, and not in the stiff, "stuffed" style, then prevalent in natural history paintings. Audubon even dramatized his bird poses a little; it has been remarked, "All his birds are Frenchmen."

Audubon was born in the French colony of Santo Domingo in 1785. At four, he was taken to France for his education and remained there until he was eighteen, when he came to America. His headquarters were at Philadelphia, then the largest city in the United States and its chief scientific center.

He tried several ventures, but the call of his art and the lure of the wilderness were too strong. He wandered all over what was then the wild interior of the country, from Kentucky to Texas, observing, taking notes, painting, collecting specimens.

Among his bird portraits is a picture of one of the handsomest of all American bird species, the ivory-billed woodpecker, now almost extinct. It is shown on the cover of this week's SCIENCE NEWS LETTER. Audubon saw and painted this pair in Kentucky in 1812. The original painting is now the property of the Library of Harvard College.

Science News Letter, April 30, 1938



LESS WELL KNOWN

Audubon's popular fame rests primarily on his studies of birds, but he did not neglect other animals. Pictures of mammalian life, as vivid and vigorous as this sketch of two squirrels of the Rocky Mountain region, illustrate a book, "Viviparous Quadrupeds."

CHEMISTRY

Improve Sulfanilamide for More Potency, Less Toxicity

Use of New Compound To Protect Mice From Influenza Offers Hope of Eventual New Usefulness for Man

CONQUEST of influenza may be the next victory that will be chalked up to the credit of sulfanilamide, widely used chemical remedy that is already famous for speeding recoveries from blood poisoning (septicemia), gonorrhea, gangrene, peritonitis, septic sore throat, and other infectious ills. This appeared from the report of Dr. M. L. Crossley, research director of the Calco Chemical Company, to the American Chemical Society, meeting in Dallas.

Advising caution against translating, immediately, findings with animals into human benefits, Dr. Crossley nevertheless reported that a newly-prepared chemical relative of sulfanilamide showed "marked protective action against experimental influenza in mice."

"Should this compound," he declared, "prove effective for human use against influenza, it would mean that mankind at least has a weapon against a scourge such as the world-wide epidemic of influenza which occurred in 1918."

The new compound is 2,5-bis sulfanilamidobenzene sulfonic acid. It is considered the most promising of a number of new sulfanilamide compounds described by Dr. Crossley because it appears to give 100 per cent. protection against streptococcus infections in mice as well as showing protective action against influenza in mice.

"While sulfanilamide has been demonstrated to be a very valuable drug in medicine, it is far from being all-sufficient and the aim of investigators in both chemical and medical research is to find new compounds which will be more effective and less toxic than sulfanilamide," said Dr. Crossley, in presenting his report with Drs. E. H. Northey and M. E. Hultquist.

Dr. Crossley described new types of drugs of the sulfanilamide family which, in tests on experimental mice, have only one-tenth the toxicity of regular sulfanilamide and from 5 to 6 times the potency. Ten times the amount of these drugs may be used with only the same toxic effect, and the amount administered is many times as potent in killing infectious disease organisms. Sulfanilamide has been used, with often dramatic results, in treating gonorrhea, septicemias (blood poisonings), gangrene, peritonitis, mastoiditis and pneumonia, said Dr. Crossley.

The new improvements in sulfanilamide drugs consist of linking two or more sulfanilamide molecules into larger molecules. Several of the drugs described by Dr. Crossley consist of two sulfanilamide molecules linked together into a dumbbell-shaped larger molecule. One can think of these new drugs, Dr. Crossley indicated, as being derived from the parent sulfanilamide and—like human

children—possessing attributes of the parent but having, in addition, some new, acquired characteristics.

While sulfanilamide has been effective in treating bacterial infections, said Dr. Crossley, some of the newer drugs, derived chemically from it, appear also to have usefulness in combatting the baffling virus diseases.

Hormone From Pituitary

For making the first isolation of a crystalline hormone from the anterior pituitary gland Dr. Abraham White of Yale University received the $1,000 Eli Lilly and Company Award in biological chemistry and Dr. White announced to fellow chemists the researches leading to this chemical feat.

The pituitary gland is the tiny body hanging from the base of the brain which leads the body's team of glands. The hormone Dr. White has isolated in pure crystalline form is the one which stimulates milk secretion.

Hope of discovering the chemical formula of this and a number of other hormones and of then creating them by chemical synthesis is very slim, Dr. White pointed out. The reason is that this and other pituitary gland hormones as well as insulin, the diabetic remedy, and the hormones of thyroid and parathyroid glands are protein in nature.

Proteins are extremely complex. Dr. White recalled that Emil Fischer, the great protein chemist, once calculated that the number of possible structural arrangements of a single protein might be as many as 10 to the 27th power. The chances of finding the correct arrangement out of so many possibilities seem remote.

Flame-Proofing Chemicals

Low-cost fire protection for America's homes should soon be more widely available through advances in chemical engineering revealed at the meeting.

Chemistry, by a new process, is now able to make cheaply and in vast quantities an acid from which can be made a unique flameproofing chemical. The chemical, known as ammonium sulfamate, does not change the appearance or feel of fabrics or paper impregnated with it. Moreover, it is not affected by dry cleaning methods so that it will safeguard draperies, upholstery and other household furnishings during their lifetime.

Parent raw material of the flameproofing chemical is sulfamic acid which while known for more than 100 years, has previously been made only by costly laboratory processes. Thus its flameproofing ammonium salt was too high-priced to be readily available to most people.

A method for the large scale production of sulfamic acid has now been devised and put into operation, Martin E. Cupery, chemical engineer of the E. I. du Pont de Nemours and Company, declared in his report to the chemists.

"Tailored" Gasolines

Synthetic, tailor-made gasolines which the petroleum chemical industry will soon be producing in quantities of 550,000,000 gallons yearly mark the fourth, and adult, stage of this major industry.

Dr. Per K. Frolich, director of chemical laboratories of the Standard Oil Development Company, Elizabeth, N. J., in an invited report described the growth of these "tailored" gasolines which are now giving airplanes a 15 to 30 per cent. increase in power take-off and climbing, or a 20 per cent. reduction in cruising fuel consumption when compared with the best previously available fuels.

Science News Letter, April 30, 1938

AERONAUTICS

New Zeppelin Is Described By American Airship Expert

Hindenburg's Successor Will Carry Only 40 Passengers Because Helium Has Less Lift Than Hydrogen

The airship, dinosaur of the air or future luxury liner of the heavens?

In Germany a long line of Zeppelins—more than 100—have gone aloft with such tragedies as the burning of the Hindenburg the exception, not the rule.

In America—and England, Italy and Russia—disaster has tagged lighter-than-air craft until Germany alone has an airship industry.

Germany has the airships. The U. S. A. has the helium that will hold them aloft without burning or explosion.

What does the coming of the new German airship add to airship design and practice? Commander Rosendahl, America's foremost expert, gives the answer in this exclusive article.

By Comdr. C. E. Rosendahl,
of the United States Navy

LIKE an aerial Phoenix, rising from the ashes of its predecessor, the newest German airship, the LZ-130, is now nearing completion in its Friedrichshafen hangar. This yet-unnamed air giant will be the first commercial airship in transoceanic service which will use helium as its buoyant, lifting gas.

The LZ-130 begins life with an important initial advantage over all its predecessors. It will never be a victim of a flaming hydrogen holocaust such as consumed the ill-fated Hindenburg. Despite some reduction in performance as the insurance premium for the use of safe helium, the fire hazard has been tremendously reduced by the use of non-inflammable helium gas.

In general design, dimensions, construction details and appearance the LZ-130 will be a duplicate of the Hindenburg for there was no fault to find with that air giant's structural form and its airworthiness. Major difference is that the LZ-130 will be lifted by helium instead of hydrogen. The accommodations are no less commodious than on the Hindenburg. In fact, they are superior in many respects.

As the LZ-130 now lies in hangar she is 803 feet long, 135 feet in maximum diameter and, when inflated, will hold 7,063,000 cubic feet of gas that will provide a total lifting power of about 200 tons.

When she takes the air, four giant water-cooled Diesel engines will drive her at a maximum speed of 84 miles an hour and with a cruising speed of 78 miles an hour.

These engines will each develop 1,000 horsepower maximum and in normal operation will develop 800 horsepower. The engines are mounted in outside power cars, two on each side of the hull.

Through the LZ-130 run two long corridors, one at the bottom and one at the axis of the zeppelin. The hull is broken up into 16 compartments, or bays, which contain the separate helium gas cells that supply the lift. The inside coating of these cells is a special gelatinous material which has excellent gas-retaining properties.

The main corridor, along the bottom