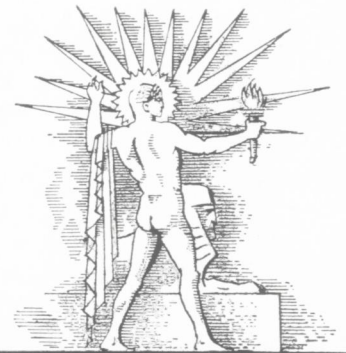
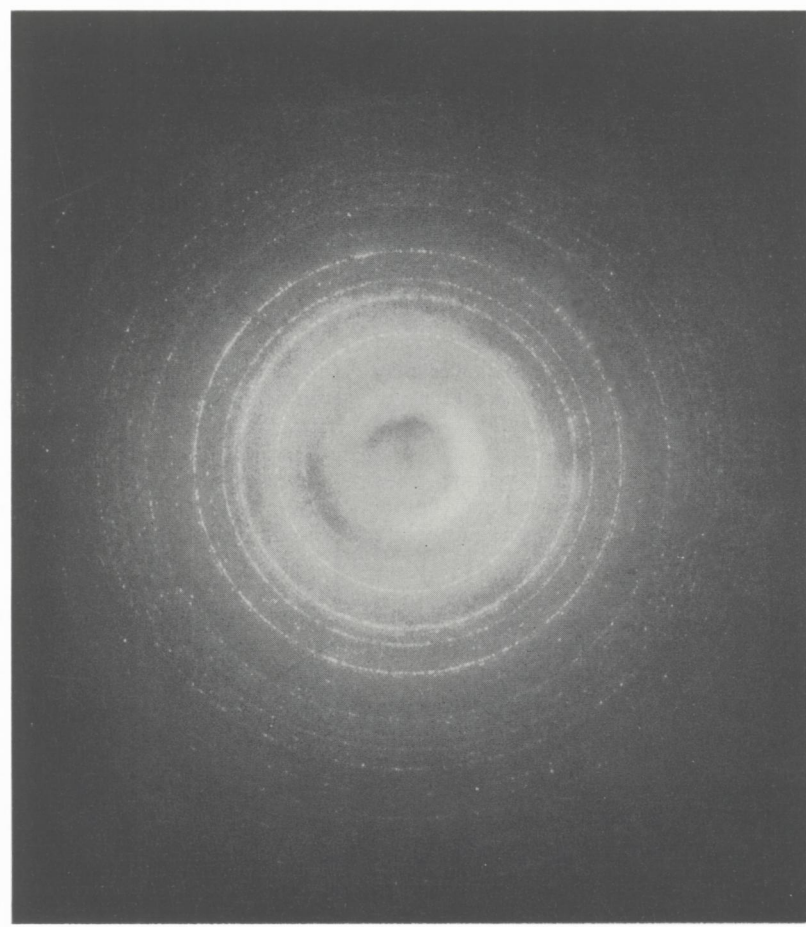


PRICE
15¢

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •



July 11, 1942

Pattern from Electrons

See Page 21

A S C I E N C E S E R V I C E P U B L I C A T I O N

Do You Know?

Adult *mosquitoes* may travel as far as 15 miles.

When Sanskrit was a living language the *sun* had 37 names.

Nearly 2,000 species of plants yield useful *fibers* and fibrous materials.

A single blast furnace has set a world's record by producing 43,000 tons of *iron* in one month.

A *cow* must be trained to back away from an electric fence; her impulse is to jump through it.

Perspiration won't interfere with the vision of surgeons who have adopted new cellulose sponge *brow bands*.

The world's first *copper mine* was operated by the Egyptian king, Snefru, 5,000 years ago on the peninsula of Sinai.

Constant warfare must be waged against *insects* which attack the vast quantities of foods stored to feed America's Army.

Predicting *storms* is the goal of Russian scientists who have set up a hydro-physical station on the Black Sea, to study behavior of waves and currents in the salt-water body.

A *salvage bell* for submarine crews, based in design on the American bell which has been tested in Navy rescue work, is owned by Sweden and is the only one of its kind in Europe.

Question Box

Page numbers of Questions discussed in this issue:

ASTRONOMY

Why are over 500 watchers observing the star SS Cygni? p. 24.

BACTERIOLOGY

How can agar be reclaimed for re-use? p. 25.

ENGINEERING

What will the after-the-war car look like? p. 22.

MEDICINE

On what grounds do anthropologists object to policy of segregation for bloods from White and Negro donors? p. 23.

What can you do to keep young looking? p. 24.

What drug helped control a cold epidemic? p. 19.

MEDICINE—PHYSICS

What happens when silver nitrate hits a typhoid fever germ? p. 21.

METEOROLOGY

How much does it rain in the Aleutian Islands? p. 28.

What scientific work did Stalin do when he was a young man? p. 25.

Most articles which appear in SCIENCE NEWS LETTER are based on communications to Science Service, or on papers before meetings. Where published sources are used they are referred to in the article.

NUTRITION

How is beef prepared for dehydration? p. 22.

ORNITHOLOGY

What creature puts up an umbrella when it is "mad"? p. 24.

PHYSICS

How are electron microscope, television and radio facsimile combined for study of metals? p. 20.

How can the electron microscope be used to analyze the structure of a minute object? p. 21.

PSYCHOLOGY

How has psychological research speeded the conversion of workers to war production? p. 26.

What can a mother do to minimize children's war fears? p. 28.

What sort of "ear defender" has nature provided in the ear? p. 19.

ZOOLOGY

How much damage is done every year by rats? p. 30.

There are approximately four ounces of table *salt* in the human body.

An acre of *buckwheat* in flower may supply enough nectar for bees to make 100 to 150 pounds of honey.

Japanese beetles prefer yellow; traps painted that color captured 50% more beetles than standard green and white traps.

Plastic discs about the size of a nickel have been designed to give the maximum *reflection* of light from minimum candle-power—they are for wear on belts, lapels or shoes during blackouts.

Single *Chinese radishes* may weigh as much as 10 pounds.

A *combat tire* must be able to run, even when flat, at a speed of 50 miles an hour.

The now-extinct *elephant birds* of Madagascar were the largest birds that ever existed, individuals sometimes reaching a height of eleven feet.

Bronchoscopes, surgical instruments used to remove safety pins from babies' bronchial tubes, are used also these days to find imperfections in airplane engine oil lines.

SCIENCE NEWS LETTER

Vol. 42

July 11, 1942

No. 2

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington, D. C. North 2255. Edited by WATSON DAVIS.

Subscriptions—\$5.00 a year; two years, \$7.00 15 cents a copy. Ten or more copies to same address, 5 cents a copy. Back numbers more than six months old, 25 cents.

In requesting change of address, please give your old address as well as the new one, at least two weeks before change is to become effective.

Copyright, 1942, by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service.

Cable address: Scienservc, Washington. New York office: 310 Fifth Avenue, CHickering 4-4565.

Entered as second class matter at the post-

office at Washington, D. C., under the Act of March 3, 1879. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and in the Engineering Index.

The Science Observer, established by the American Institute of the City of New York, is now included in the SCIENCE NEWS LETTER.

The New York Museum of Science and Industry has elected SCIENCE NEWS LETTER as its official publication to be received by its members.

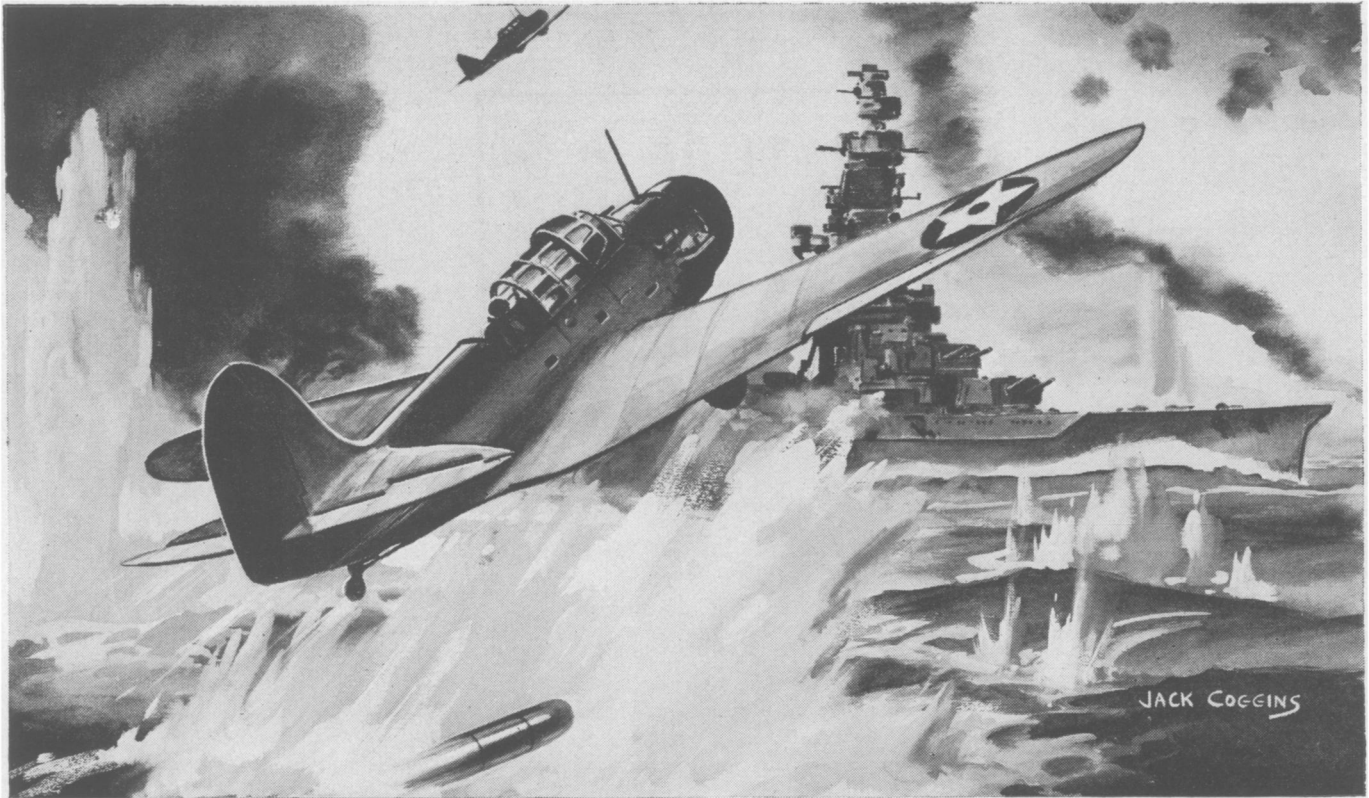
Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N. Y. C., PEnnsylvania 6-5566; and 360 N. Michigan Ave., Chicago, STate 4439. SCIENCE SERVICE is the Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Henry B. Ward, University of Illinois; Edwin G. Conklin, American Philosophical Society; J. McKeen Cattell, Editor, Science. Nominated by the National Academy of Sciences: R. A. Millikan, California Institute of Technology; Harlow Shapley, Harvard College Observa-

tory; W. H. Lewis, Wistar Institute. Nominated by the National Research Council: Ross G. Harrison, Yale University; C. G. Abbot, Secretary, Smithsonian Institution; Harrison E. Howe, Editor, Industrial and Engineering Chemistry. Nominated by the Journalistic Profession: O. W. Riegel, Washington and Lee School of Journalism; A. H. Kirchhofer, Buffalo Evening News; Neil H. Swanson, Executive Editor, Sun Papers. Nominated by the E. W. Scripps Estate: Frank R. Ford, Evansville Press; Warren S. Thompson, Miami University, Oxford, Ohio; Harry L. Smithton, Cincinnati, Ohio.

Officers—Honorary President: William E. Ritter. President: Edwin G. Conklin. Vice-President and Chairman of Executive Committee: Harlow Shapley. Treasurer: O. W. Riegel. Secretary: Watson Davis.

Staff—Director: Watson Davis. Writers: Frank Thone, Jane Stafford, Marjorie Van de Water, Morton Mott-Smith. Science Clubs of America: Joseph H. Kraus, Margaret E. Patterson. Photography: Fremont Davis. Librarian: Minna Gill. Business Manager: Alvin C. Stewart. Sales and Advertising: Hallie Jenkins, Austin Winant. Correspondents in principal cities and centers of research.



Bombers from the Bottom of the Deep Blue Sea

THERE'S a fabulous amount of magnesium in every cubic mile of sea water.

Enough magnesium for more than *four million* Flying Fortresses. Enough to lay a continuous ceiling of bombers . . . a hundred miles wide and stretching all the way from London to Berlin!

Now magnesium can't be dredged out of the ocean . . . for every ounce of this rare metal must be produced by electrolysis. This necessitates the conversion of vast amounts of alternating current to direct current, at the very water's edge.

The best means of converting power is the mercury arc rectifier. As long as ten years ago, Westinghouse Research Engineers began experimental work on a *new type* of mercury arc rectifier which would be more efficient . . . more economical . . . less costly to install and maintain than existing types.

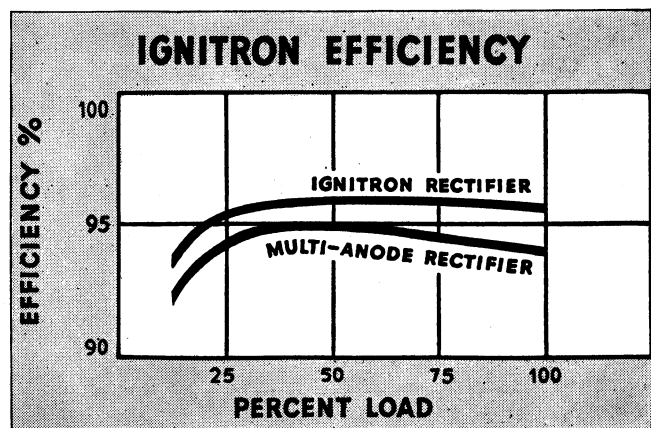
These Westinghouse scientists realized that new untapped fields in metallurgy would be opened by the perfection of an improved mercury arc rectifier. In 1937, they brought forth the *Westinghouse Ignitron*.

The Ignitron operates on the radically new principle of *starting and stopping* the mercury arc with each cycle. This means that electrodes can be placed much closer together . . . grids and shields reduced . . . arc drop

voltage decreased . . . voltage control simplified . . . arc-back practically eliminated. And all of this assures higher efficiency and greater reliability.

More than 1,000,000 kw of Ignitrons are now at work in magnesium, aluminum and chlorine plants, in electric railway systems, in mines, in many war industries.

And so, the germ of an idea . . . born ten years ago in the Westinghouse Electronics Laboratories . . . is now contributing its important share in winning the war today.



Westinghouse

WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, PITTSBURGH, PENNSYLVANIA