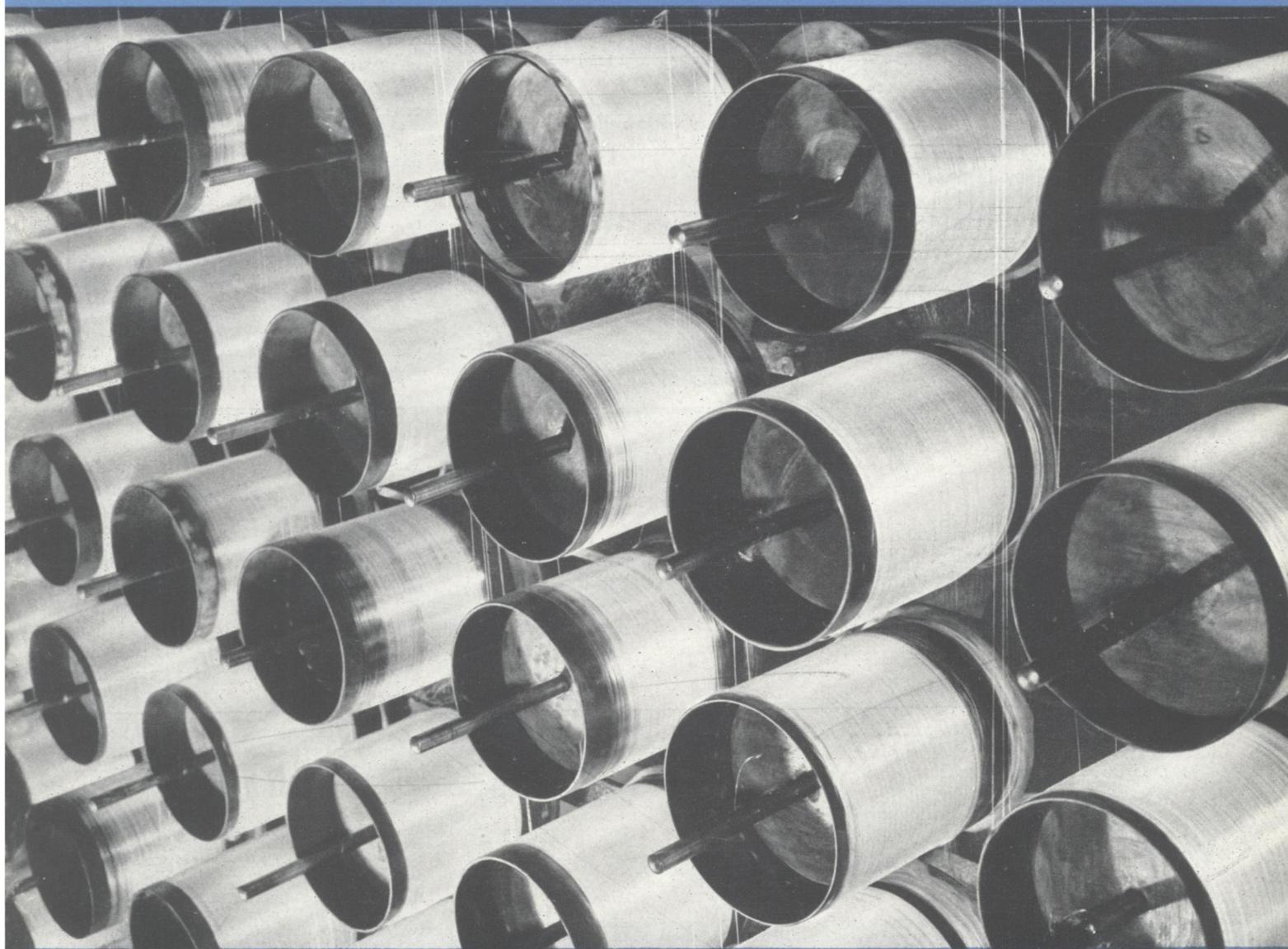


15¢

# SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE • OCTOBER 3, 1942



Glass Yarn for War

See Page 217

A SCIENCE SERVICE PUBLICATION

## Do You Know?

Oil field brine may prove a valuable source of *magnesium*.

One cord of oak, hickory, hard maple, or yellow birch *fuelwood* is equal in heating value to a ton of anthracite coal.

*Flax* waste, pressed into briquets and burned, provides a high grade of fuel for motor vehicles, according to Danish experimenters.

One hundred years ago the distance of the *sun* was uncertain to one part in twenty; now it has been reduced to one part in a thousand.

*Cacao*, source of chocolate and cocoa, is harvested in May in South America, in the transition period between the rainy and the dry seasons.

Experimental packages of *dehydrated foods* are stored for several months under tropical climate conditions, then opened to test the nutritive value and palatability of the contents.

Analysis of the *tastes* of audiences in Mexico's 800 moving picture houses shows a decided preference for swash-buckling adventure stories, Westerns, and Tarzan pictures.

A *portable radio*, whose antenna can be sewn into a coat, enables police officers in one city to keep in touch with headquarters not only while walking beats or riding motorcycles, but while demolishing hamburgers in a restaurant, as well.

## Question Box

### Page numbers of Questions discussed in this issue:

#### AGRICULTURE

How is it possible to increase the Hawaiian sugar crop to total theoretical yield? p. 220.

#### ASTRONOMY

Where are astronomical pictures used on a special issue of postage stamps? p. 212.

#### EDUCATION

What activities are planned for the high school Victory Corps? p. 212.

#### ENGINEERING

How can paints be used to salvage wasted illumination? p. 213.

#### GEOLOGY

How are neutrons used to search for oil deposits? p. 216.

Where will oil come from for the Alaska highway? p. 214.

#### INVENTION

What has been the invention most often suggested to the National Inventor's Council? p. 219.

#### MEDICINE

What disease attacks the Japanese more often than it does Whites? p. 211.

*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.*

What short of bandage is used to save the lives of patients with crushed arms or legs? p. 222.

Why is cancer expected to increase? p. 211.

#### NUTRITION

Of what is the Army's emergency field ration composed? p. 221.

What substitute foods can be used on meatless days? p. 218.

#### ORNITHOLOGY

What disease are starlings suspected of carrying? p. 216.

#### PHARMACY

How have ointments been improved? p. 215.

#### PHYSICS

How many physicists are turned out per million population by English universities? p. 211.

#### PSYCHOLOGY

Why is work without pay more satisfying to a war-lonely woman? p. 214.

#### RESOURCES

How are scrap drives endangering precious British relics? p. 223.

Of what use is the increased production of balsa wood? p. 216.

*Sunflower* seeds are substituting in Germany for peanuts and chewing gum, as a confection.

The *engine* of one airplane type is composed of 3,500 different parts, totaling 8,500 individual pieces.

*Tenders* of new 93-foot locomotives, recently put into service, carry 25 tons of coal and 22,000 gallons of water.

*Cobalt* has been reported by one experimenter as essential for the forming of hemoglobin in sheep and cattle.

From *peat*, Norwegian experimenters have produced artificial leather, bread flour, gas, and even a kind of wine.

Soldiers at a Colorado airfield have discovered a law making it punishable to shoot *buffalo* out of a barracks window.

## SCIENCE NEWS LETTER

Vol. 42 OCTOBER 3, 1942 No. 14

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: Scienserve, Washington.  
New York office: 310 Fifth Avenue, CHickering 4-4866.

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, Glenn Sonnedeker. Science Clubs of America: Joseph H. Kraus, Margaret E. Patterson. Photography: Fremont Davis. Librarian: Page Secrest. Business Manager: Alvin C. Stewart. Sales and Advertising: Hallie Jenkins. Correspondents in principal cities and centers of research.

# To the Educators of America:

**GOAL:**

To aid the Teachers of America to discover and develop scientific and technical ability in American Youth for war and peace

**GOAL:**

A Science Club in every Public High School, Private or Parochial secondary school . . .  
**A SCIENCE CLUB IN YOUR SCHOOL**

★ MORE THAN 30,000 boys and girls belonging to more than 1,000 science clubs, sponsored by more than 1,000 alert teachers, have engaged in scientific discussion and experiment during the past year.

starting in this movement to uncover and expand scientific knowledge and skill among boys and girls in school.

★ This was a test year, since SCIENCE CLUBS OF AMERICA, with which these clubs are affiliated, is just

But now we are on the way—all of us together. Now we are ready to go ahead, full tilt.

★ **This is an important part of the national effort to bring high school education to the highest point of service for war and peace. From generals and admirals, from college presidents, industrialists and men in public life, the cry has come: "Find and develop more scientific ability among our boys and girls."**

We must meet the challenge. What is your share in this important movement?

- (1) Organize, or cause to be organized, a science club in your school.
- (2) Affiliate your proposed (or already organized) club with SCIENCE CLUBS OF AMERICA.

No fee is required for affiliation.

- (3) Accept and use the assistance offered by SCIENCE CLUBS OF AMERICA.

Last year, a fee was required from every affiliated club. This year, no fee is required to *get started* and to receive the *continuing help and cooperation* of

SCIENCE CLUBS OF AMERICA. SCA—dedicated to the development of science talent—is administered in the public interest by Science Service, the endowed, non-profit Institution for the Popularization of Science.

Some clubs will want to help in the growth of the movement—such clubs may voluntarily and at their discretion elect to contribute \$2 to the movement and receive charter certificates and membership cards. This is entirely at their option.

On the next pages we have reproduced some of the activity notes of the past few months. They are short, but each tells a story of interesting meetings, knowledge gained, skills improved.

Members of science clubs affiliated with SCIENCE CLUBS OF AMERICA are having a good time while benefiting themselves and their country. Science clubs achieve some of the most important objectives of the new High School Victory Corps. The amazing success of the First Annual SCIENCE TALENT SEARCH and the resulting awards of Westinghouse Scholarships, proves the practical value of science club activity for boys and girls. Such activity gives a running start to a school for participation in the *Second Annual SCIENCE TALENT SEARCH*, soon to be announced.

The GOAL for the educators of America is a science club in every public high school, private or parochial secondary school—with 500,000 members in those clubs. That's a big job. But the time is not far off when a school without a science club will be like a schoolroom without books.

The IMMEDIATE GOAL is: A science club in your school, and to get it, your positive action is needed.

★ We are ready to help you.

## ACTIVITY NOTES

from CLUBS affiliated with SCIENCE CLUBS OF AMERICA

**Springfield, Mass.** You have heard of an Aquacade and a Cavalcade, but did you ever hear of a "Technicade"? That is the name for their technical science show concocted by members of the Chemistry Club at the Technical High School. The recent "Technicade" included discussions and demonstrations of chemical warfare, incendiary bombs, explosives and projects showing the distillation of crude oil, chemistry of photography, spectroscopy and plastics. The club is sponsored by Alfred R. Lincoln, chemistry teacher.

**Philadelphia, Pa.** The Fact-finders, a club formed in Troup 293 Boy Scouts of America, and sponsored by Ben Maser, Director of Crafts, Hobbies and Educational Projections is interested in photography, miniature model making, chemical and electrical experiments, nature study and collections, mineralogy, miniature gardens, aquariums and astronomy. It presents programs to the Parent Association and hears lectures by visiting scientists.

**San German, P. R.** "Explorers of the Unknown" is the name of a new science club at the San German High School. Sponsored by J. Nagario de Martin, chemistry teacher, this group puts realism in its projects by collecting money for the purchase of needed classroom material.

**Kalispell, Mont.** A buying service for amateur scientists is being operated by an independent group formed here. Such a buying service is an excellent plan for any science club. It is the duty of a small group in the club not only to get information as to where to buy necessary materials but also to serve as an outlet through which surplus materials may be disposed of to others in need of the supplies. The Kalispell Amateur Chemist Society is sponsored by Waldemar Olsen, science teacher.

**San Diego, Calif.** Chi Eta Mu, a club formed at the Hoover High School, is hinging most of its activities upon war work and national defense. At present, members are taking first aid courses under the sponsorship of L. Sorkness, head of the science department.

**Lakeville, Conn.** Two or three social meetings with games, songs, and refreshments add sparkle to the activities of the Hotchkiss Chemistry-Physics Club at Hotchkiss School, Lakeville, Conn. At this school one will find photography, medical, weather bureau and railroad clubs. This club is sponsored by William N. Stakely, chemistry instructor.

**Richmond, Ind.** The study of Richmond fossils is being undertaken by members of the Hibberd Science Club, Hibberd School. The group is sponsored by Velma McCulloch, science teacher.

**Chicago, Ill.** Members of the De La Salle Biology Club at De La Salle High School are studying land erosion. Models are being built to illustrate the factors which are responsible and which can be used to control the washing away of the soil. The club is sponsored by Brother George, F.S.C.

**Altoona, Pa.** The Nature Observation Club at Altoona Senior High School, under the sponsorship of Harold D. Yoder, biology instructor, has planted more than a thousand trees. To encourage and practice conservation the members have classified plants and animals found in their natural habitats. Throughout the winter the group has maintained bird-feeding stations.

**New York, N. Y.** The Biology Squad of the DeWitt Clinton High School, under the direction of Miss Dorothy P. Tuthill, is working out advanced research problems in slide making, hydroponics, genetics experiments with fruit flies, guinea pigs, tropical fish, and the preparation of museum mounts such as stained bone and tanned skins.

**Oneonta, N. Y.** The Chem Squad of Oneonta Senior High School, sponsored by Mrs. Madeleine Frink Coutant, is holding monthly movie shows on scientific topics not taught in high schools. The Squad visited a science club in Walton, N. Y., and held a Science Congress.

**Flint, Mich.** Slides and various mechanical devices to demonstrate positions of the principal stars and constellations and to show the movement of the planets and other heavenly bodies are being made by members of the Alpha Astronomy Club at Emerson High School. Public demonstrations and night observations are carried on avidly. Members also engage in round-table discussions and participate in their own "Hobby Lobby." The club is sponsored by teachers Elizabeth Norton and Ralph Brown.

**Ashtabula, Ohio.** Before a candidate can be accepted for membership in the Park Science Club at Park Junior High School, the individual must submit a scientific project for approval. Projects thus submitted are used as the basis for future programs of the club. Maintaining the school's decorations, scrapbooks and exhibits are important duties of the members. The club is sponsored by Richard G. West, science teacher.

**Harrisburg, Ill.** Bernice Varvil, sponsor of the Advanced Science Club of the Harrisburg Junior High School, would like to exchange insect exhibits and other items with a club in some Latin American country.

**Sapulpa, Okla.** Members of the Sapulpa Junior Science Club at Washington School are making what they believe will become the finest collection of insects and seeds of wildflowers and weeds in that part of the country. The club is sponsored by Zella Breitenbecher, teacher.

**Tulsa, Okla.** The Field and Stream Club of the Woodrow Wilson Junior High School is actively interested in natural sciences with an occasional mixture of the physical sciences. Every year the club makes a Christmas bird census; participates in a school flower show. This club is sponsored by Edith R. Force, science teacher.

**Longview, Texas.** The Lithium Chapter of the Texas Junior Academy of Science which is at Longview Senior High School will undertake a study of the natural resources of Texas. Sponsored by Adda Reid Templeton, teacher of chemistry and physics.

**Barker, N. Y.** Each week a committee of the Science Research Club at Barker Central School records the relative humidity, temperature, barometric readings and wind direction and prognosticates the coming weather. This information is posted for the benefit of the student body. Priscilla Wolf, head of the science department, is sponsor of this club.

**Syracuse, N. Y.** Defense bonds and stamps were awarded for outstanding contributions to the program of the Syracuse Science Center. This was a Congress held for the Science Clubs in the thirteen counties served by this Center. The event was held at Syracuse University. Dr. Richard R. Armacost of Syracuse University was director.

**Duke Center, Pa.** The Science Club of the Otto Junior-Senior High School intersperses its work on scientific projects with a discussion of current scientific news and problems. The members of this group already have studied some taxidermy, geology, birds and trees. They have made model airplanes and studied various inventions. A recent trip to a game preserve familiarized the members with small game in its natural habitat and with the state's hunting laws. The club is sponsored by Harold Fenner, science teacher.

**New York, N. Y.** The Science Workshop Club formed at the High School of Music and Arts is a combination of seven workshop clubs dealing respectively with poster making, model making in balsa wood, photomicrography, biology experiments, needlework diagrams, making slides for projection, and vitamin studies and rat breeding. The club is sponsored by Dorothy M. Muller, teacher in advanced biology.

**Detroit, Mich.** The Mineral Club formed at Eastern High School is surprisingly familiar with strategic materials. The reason is that this group has set up an exhibit of things important to our country's National Defense and is now also working upon conservation displays. The club is sponsored by Willard C. Moore, instructor in geography and geology.

**New Cumberland, Pa.** A model of an atom smasher will be completed this year by members of the Science Club of New Cumberland High School. This active group operates the school's public address system and visual education program. Plans are now being laid for operating a weather bureau for the school. Some of the members are building radio transmitting and receiving sets while others are developing and printing their own pictures. Two of the members are carrying on experiments in color photography. The club is sponsored by John R. Smeltz, chemistry and physics teacher.

**Marinette, Wis.** The Nucleus, a Biology Club at the local High School, in its lighter moments, sponsors a school dance, candy sale and a terrapin derby (turtle race to you). Considerable experimental work is being done with soilless gardens and earthworm culture. The plants and aquaria in the classroom are attended; and insects are mounted and preserved. Club members also study fresh water biology and take numerous field trips for experimental material. This group is sponsored by E. Gertrude Wagner, biology teacher.

**Baltimore, Md.** Glass blowing and experimental work with liquid air are two of a number of projects which at present are interesting members of the Edgcomb Science Club, sponsored by Mrs. J. R. A. Davis, instructor in biology.

**Gardiner, Mass.** National recognition and local acclaim has come to members of the Natural Science Club of Gardiner High School for establishing and maintaining a Nature Trail on 47 acres of city land made available to the club by local authorities. With little or no preliminary training the club set out the trail, posted 60 identifying markers, cleared underbrush, planted 450 four-year-old trees, deepened and dammed a small swamp and disposed of brush piles. The club, sponsored by Helen Whittier, biology teacher, had the wholehearted support of Omer H. La-Roche, municipal tree warden.

**Staunton, Va.** Amazing as it may sound the Science Club of the Virginia School for the Blind is studying photography this year. The sponsor of the club is Robert E. Bruce, teacher of science and mathematics.

**Sikeston, Mo.** During the past year members of the Sikeston Science Society of Sikeston High School, constructed three group projects of which they are justly proud. The first is a stroboscope which can be used to make rapidly rotating objects appear to stand still or move backward. The others are a radio receiver and a portable receiver. The sponsor is Paul H. Roberts, head of science department.

**Raleigh, N. C.** National Defense and conservation play an important role in the programs of many science clubs. The W.H.S. Science Club formed at Washington High School, is carrying on laboratory projects to demonstrate the making of the more common household products such as baking powder, soaps, inks, and pure food dyes; while others are conducting nutrition experiments. The club is sponsored by Mrs. Fanny V. Latham, teacher.

**Brasher Falls, N. Y.** Men of science from distant towns frequently lecture to members of the Luminar Science Club established at Brasher and Stockholm High School. This club has had a very successful "Penny Bazaar." The funds provided by the "Bazaar" were used to purchase materials and equipment. Members also hold a Science Fair at which projects and exhibits are displayed. The group is sponsored by Winom Mahoney, science instructor.

**Pittsburgh, Pa.** Everything directly or remotely connected with microscopic work and techniques is of interest to members of the 'Scope Club at Taylor Allderdice High School. Making slides, mounting specimens, micro-projection and photo-micrography are a few of the interests. The members also mounted insects in plastics which were exhibited at the Science Fair at Pittsburgh. This group is under sponsorship of Mae Weber Smith, biology teacher.

**Austin, Texas.** During the past year members of the Raymond L. Ditmar's Scientific Society at Austin High School initiated a tuberculin testing campaign for the school. The sponsor is S. W. Hayes.

**Princeton, N. J.** One of the members of the Science and Engineering Club at Princeton High School has almost completed a high-temperature arc furnace with which he and other members will carry on extensive investigations. Such a furnace gives enough heat to melt or volatilize nearly every known metal. The use of the school laboratories and facilities for any phase of investigation in any branch of science or engineering is granted to every member of the club which is sponsored by A. Lewis, head of the chemistry department.

**More than one thousand science clubs are active in schools—soon there will be many, many more.**

## *Services Supplied to Affiliated Clubs* WITHOUT COST

SCIENCE CLUBS OF AMERICA is administered by SCIENCE SERVICE in the public interest

**ASSISTANCE OUTLINES**—to help you get started, and to help stimulate club activities, sponsors receive:

*How to Organize and Activate Your Science Club*  
*War Services for Science Clubs*

**SCA SPONSOR GUIDE**—A news bulletin to sponsors, telling what clubs and science centers are doing, with notes on new methods. Sent to sponsors at intervals during the school year.

**CLUB PROGRAM MATERIAL**—The *Bulletin of Services*, sent to each sponsor, describes material that may be obtained free or at low cost from industrial, educational, governmental, philanthropic sources. Makes it easy to select and obtain just those materials most useful to the group in the club. A committee of students can take this *Bulletin of Services* and work out a tentative program of meetings to submit to the sponsor for approval.

**POSTERS FOR MEMBERS**—What are other clubs doing? Every club member is interested in that. It brings the spirit of rivalry to the work of the club. For this reason *poster-pages* are provided from time to time, containing news of activities in clubs all over the Nation. These can be passed around among the members or placed on a club bulletin board.

**SCHOLARSHIP OPPORTUNITIES**—Sponsor and members will be kept informed of the nationwide *Science Talent Search* for the Westinghouse Science Scholarships, as well as other higher education scholarship possibilities of which members may avail themselves.

(Services supplied to science clubs **WITHOUT COST**—continued from preceding page)

**YOUTH LOOKS AT SCIENCE AND WAR**—A *book* will be sent to every sponsor, containing the questions and answers of the first Science Talent Search, the essays of the 40 boys and girls who won the trips to Washington, and the names of the 260 who received Honorable Mention. This book contains subject matter for many meetings. It will be an inspiration and a definite help to club members entering the next annual Science Talent Search.

**BOOKLIST FOR SCIENCE CLUBS**—A compilation of titles, classified by science subjects, useful as a check list and research source for members.

## *Supplied to Clubs* AT THEIR OPTION

**CHARTER, MEMBERSHIP CARDS**—Voluntarily, and at each club's discretion, \$2 may be contributed to Science Clubs of America to be used in promoting the formation of science clubs in all schools, such \$2 contribution to bring the club its CLUB CHARTER CERTIFICATE for 1943, and an official SCA MEMBERSHIP CARD for *each member* of the club.

**INSIGNIA**—Beautifully embroidered felt emblems, with SCA insignia in red, white and blue, suitable for sweater, dress, coat or armband use, 35c each. They are equally popular with boys and girls. (A limited quantity of sterling silver pins with safety catches and some pendants, both suitable for club awards, 50c each.)

**PRIVILEGE CARD**—Every affiliated club receives a Privilege Card which provides a 40% saving on a one year subscription to SCIENCE NEWS LETTER, the weekly summary of science. This magazine brings its readers of all ages the new developments in 88 science subject classifications. Special rate to affiliated science clubs, \$3.00 per year (the regular subscription rate is \$5.00 per year).

**THINGS of science**—Twelve times a year, practical exhibits, experimental material, instructional information in kit form handy for club examination and testing are sent to purchasers of this unusual service. Sponsors all over the country have found "THINGS of science" a useful supplement to science club programs. One year, \$4.00.

**BOOK SERVICE**—Science Clubs of America will obtain for sponsors or affiliated clubs any book of a scientific nature that is published in the United States, and send it to the sponsor postage free on receipt of check or money order for the price of the book. Lists of the latest books on science subjects are published weekly in SCIENCE NEWS LETTER, for the convenience of sponsors and clubs.



## APPLICATION

Open to Clubs to be Organized  
as well as to Clubs now Active

To SCIENCE CLUBS OF AMERICA, 1719 N Street, N.W., Washington, D. C.

Please enter us for affiliation with SCIENCE CLUBS OF AMERICA. It is understood that you will promptly send to me as sponsor or leader, free, "How to Organize and Activate Your Science Club," "War Services of Science Clubs," "Youth Looks at Science and War," "Bulletin of Services," and "The Science Club Booklist." We are to receive, free, the SCA Sponsor Guide, Posters, Science Talent Search announcements, and all SCA information mailed to affiliated science clubs including news of activities of other science groups throughout the Nation, and in other ways to have the cooperation of the SCA staff in helping our Club conduct interesting and worthwhile activities.

Voluntarily and at our discretion, our Club may elect to contribute \$2 to be used in promoting the formation of science clubs in all schools—such \$2 contribution to bring us our CLUB CHARTER CERTIFICATE for 1943, and an official SCA MEMBERSHIP CARD for *each member* of our Club.

PLEASE PRINT

Name of Sponsor \_\_\_\_\_  
Position \_\_\_\_\_

School or Organization \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

*You are cordially invited to send in  
this APPLICATION for the affilia-  
tion of a club in your school—  
whether the club is to be organized  
later or is now active.*