

GENERAL SCIENCE

Clubwork Makes Science Fun

Most of tomorrow's scientists start with Science Clubs of America, probably the largest scientific group in the world. It serves as a proving ground.

By MARGARET E. PATTERSON

➤ANY one of the third of a million boys and girls in Science Clubs of America will tell you science is fun!

"Especially," they add, "if you can do it with other kids."

If you'd like to ask some of these 10- to 20-year-olds why they find science so fascinating, try the nearest school laboratory after school hours. They will be there working, even on Saturdays.

Look for them in basement workshops and attic experimental stations. A barn or a woodshed is a likely place, too.

You may detect their work before you see them.

Track down the source of those strange chemical fumes, odors and explosions. You'll probably find a group of teen-agers concocting a new plastic or synthesizing a new compound.

Spot a novel radio "rig" on a roof. Inside you're likely to find a group of "hams" comparing notes on hook-ups, circuits, code call letters.

Follow the next flight of model planes you see. The youthful designers will be on the ground comparing notes on wing surfaces, gas motors, radio controls.

Or find the owners of that back yard menagerie. The white mice may belong to a boy who plans to be a doctor; the reptiles to a future zoologist; the hamsters to a girl who wants to be a biologist when she grows up.

Clubs Total 15,000

You'll find these groups of young scientists all over the nation, and in foreign countries, too. There are 15,000 science clubs in this country and abroad affiliated with Science Clubs of America. It is probably the largest scientific group in the world.

A widespread liking for science is engendered by the natural inquisitiveness of youth combined with the intensely scientific flavor of our times. Tremendous impetus for this group effort in science has stemmed from the organization of Science Clubs of America in 1941. It now enrolls most of those who will be our scientists of tomorrow. It also serves thousands of youngsters who have no desire to be professional scientists but are keen about science as a hobby or an avocation. As the citizens of tomorrow they will have a real appreciation of the role science is playing and a speaking acquaintance with its language and methods. The awe and alarm

with which science is viewed by some of their elders is foreign to these well-informed youngsters.

What a science club does depends upon the age and interests of the members and the assistance of the adult who acts as sponsor.

If the members are very young, they are apt to do a great deal of collecting: sea shells, leaves, rocks, minerals, insects, stamps, pets, pictures, bird's nests or any of dozens of other combinations. Singly or in groups they track down or trade for additions to their collections. They arrange their treasures in neat boxes, carefully lettered scrap books or flashy exhibits. They dig into the books that can help them identify their finds and are alert to every chance to "swap" or exchange—by the piece or by the collection.

Among junior high school age students the interests are usually general. There may be as many interests as members—or even more as each may have a long string of

hobbies he is riding at the same time.

Everything is subject to their curiosity. Individually or collectively the members may turn almost overnight from insect collecting to crystal growing; from building terraria and aquaria to glass blowing; from tropical fish breeding to scientific crime detection; from microscope studies to stuffing animals. Somewhere along the line they all, girls and boys alike, specialize in noisy, smelly chemical experiments.

Absorb Information

Junior high science club members absorb great blocks of information from one another. They shed or take on a new field of science interest as effortlessly as they might take off or put on a coat. They keep voluminous notes on observations of the weather, breeding experiments, dissections, bird migrations. They exchange complicated diagrams and plans, often understandable only to them. Books, magazines, correspondence and endless conferences with their chums are essential to quench the thirst for knowledge about their current interest.

Senior high school age members of science clubs have decided interests for such fields as astronomy, electronics, embryology,



PRIVATE PROJECT—Science club projects range from the home living room to public exhibits: 15-year-old John Lankford, Washington, D. C., has his astronomical equipment set up in the living room of his home.



GROUP PROJECT—Science club work is generally done by groups such as this one of youngsters studying taxidermy at the Los Angeles County Museum.

microscopy, etc., and join others who share their interest.

Students this age show the effect of the collecting and observation most of them have experienced in their earlier years. By sampling many fields they have discovered their likes and aptitudes and have begun to center their interests on fewer or even on one science. Generally by this time they know whether they like best to deal with living or non-living materials: whether they prefer biological or physical sciences.

Club Is Proving Ground

Science club members spend much time considering their future in science, and, if they are serious about it as a profession, they plan for careers in medicine, chemistry, physics, engineering, zoology, astronomy, mathematics or other fields according to how they feel about the experiences they have had in their clubs with dissection, chemicals, machinery, motors, microscopes, telescopes, slide rules, etc. The club serves as a proving ground at this stage, and many a youngster has thus saved himself years of time by finding out at this age what he does and does not want to do in science.

Reading is wider and more carefully planned, their records more accurately kept, their conclusions more soundly made and they seek the help of educators and scientists who can direct their new-found enthusiasms about science.

Like all organizations science clubs must deal with their business during the meetings, but this is usually dispensed with quickly and the members hurry on to the program.

The program may consist of a work session with each member carrying on his particular experimental study or it may be a demonstration of the work of one or several to the rest of the club. Sometime during the year each member thus gets a chance to "perform" and the exchange of information is considerable especially in the question periods that follow the "lectures."

Another popular type of program is given by a guest speaker who is invited to appear before the club to explain his specialty. He may be a local scientist, engineer or hobbyist. Occasionally it is an "alumnus" who returns to the club to report on his career's work. Always there are lively and extended question periods after the talk and many a guest speaker has come away limp from the number and diversity of difficult questions the members have fired at him. The public is often invited to these special meetings and parents especially find them stimulating.

Report on Reading

Clubs like to keep up with what is new in science and find a handy way to do it is to have each member report on his current reading briefly at rollcall time.

They feel a responsibility toward the school in keeping them up-to-date in science, too, and achieve this by maintaining a question box or running a "question of the week" feature on a bulletin board. Many clubs have permanent science exhibits like natural history museums or display cases which they change from week to week for all students to enjoy. They are often called upon to put on school assemblies

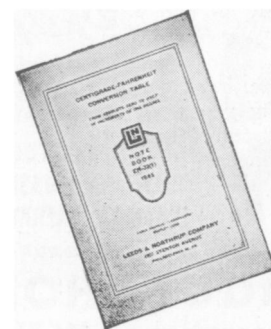
and find that the magic type of chemical show is a sure hit with the student body. Occasionally they get serious about these programs and give their fellow students a half-hour or hour of real science.

A publication—weekly, monthly or quarterly—is achieved by some clubs. If there is enough money in the treasury this can be printed, but less affluent clubs settle for mimeographed or other types of duplicated bulletins, which they exchange freely with far away clubs to the benefit of all.

A few clubs have uniforms, usually centering around the emblem of SCA. One club decorated the walls of their quarters with scientific caricatures.

Raising money for the club must be considered. Some can be done with dues, but when large amounts are needed, they run sales of food, sell Christmas cards they have made in their photographic lab, contract for magic shows, make and sell scientific equipment, or devise some other scheme for raising needed funds.

Meeting other clubs with similar or different interests is a goal toward which all clubs work. If they are close enough to others they exchange programs and socialize afterward. Most of them belong to some regional or state organization such as a Junior Academy of Science and thus get a chance to attend a meeting with all



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other clubs in that area once or twice a year.

Science Fairs are attracting more and more clubs. In 1949 these huge showings of the work of science clubs in a locality were held in such places as Atlanta, St. Louis, Washington, D. C., Pittsburgh, Philadelphia, Boston, Providence and in Buffalo, Oneonta and Potsdam, New York. One Fair had 1,400 individual entries this year. The Fairs run from three days to 10 days and are visited by thousands of adults, who are often amazed at the scope of science interests and abilities among young people.

High spot in the year for those clubs having high school seniors is the annual Science Talent Search for the Westinghouse Science Scholarships, conducted each year by Science Clubs of America. From the 16,000 boys and girls who enter, 300 are chosen for honors in this stiff competition which requires a three-hour aptitude examination, scholastic and personal records and a 1,000-word essay on "My Scientific Project." Each of the 300 is recommended to the college or university of his choice and most receive scholarships or other financial assistance that will assure them a chance to carry on their education in science.

Out of the 300 a total of 40 are invited

to Washington, D. C., for the five-day, all-expenses-paid Science Talent Institute. Here they learn of the latest developments in science, meet famous scientists, visit places of scientific interest and are awarded scholarships ranging in size from \$100 to \$2,800. Every club aspires to have a winner or honorable mention in this competition and many make this one of the major goals of their whole year's program.

Every school that places a winner receives a plaque to hang in their club quarters. No school has been able to win one of these each of the eight years of the competition but some can boast several. The whole school celebrates when it is honored in

the Search, and some have even granted half or whole day holidays when their winner returns from the Institute after being named the best boy or girl scientist in the USA.

Organizations of scientists in 15 states cooperated with SCA in 1949 to hold state Science Talent Searches and thus were able to honor other outstanding young scientists within those states with scholarships or cash awards to further their science education.

For information about any of the activities of Science Clubs of America write to Science Service, 1719 N St., N. W., Washington 6, D. C.

Science News Letter, September 17, 1949

METEOROLOGY

Hurricane Forecasting

➤ THE path to be followed and the probable damage to be done by hurricanes cannot yet be predicted with accuracy, but much progress in hurricane forecasting has been made in the past few years.

Because of the severe annual loss of life and property on Gulf Coast and Atlantic Seaboard regions, the U. S. Weather Bureau is giving particular study to the subject. Thirty-hour warning is now fairly reliable. These forecasts are from experienced weather men whose predictions are made on the basis of knowledge of a present hurricane and knowledge obtained by a fundamental study of hurricane movements of the past.

Cooperating with the Weather Bureau in hurricane studies is the Weather Service of the U. S. Air Force. Daring pilots of Air Force planes, with recording instruments and Weather Bureau observers abroad, have penetrated deep into the outer fringes of these gigantic tropical storms. The result is a better knowledge of air movements in a hurricane, and air movements preceding the storm, which are useful to a certain degree, in forecasting.

Of great assistance also, are radio reports from ships at sea and from aircraft over the ocean. Radiosonde, balloon-borne instruments carried high above the earth, is playing an important part. The instrument send constant weather data to the earth below by automatic radio signals.

There are hurricanes in many parts of the world, although they are known by different names. In the western North Pacific, they are called typhoons. In the northern Indian Ocean, they are known as cyclones, and in Australia as willy-willies. All, however, are tropical storms which originate close to, but not over, the equator.

The hurricane season in America is the late summer and early fall. The storms differ in violence and also in the distance they travel. Many of them hit the coast in the general Florida region, some travel-

ing up the coast, and others crossing the peninsula to appear soon in coastal regions of the Gulf states.

The violent hurricane of 1944 that caused millions of dollars damage in the New England states, and the perhaps equally violent storm of 1947 that crossed Florida and into Louisiana, might be cited as examples. The latter took 61 lives and caused a property loss of \$110,000,000. These two are the worst American hurricanes of the present forties.

During a 25-year period from 1917 to 1941, some 4,200 persons in the United States lost their lives by hurricanes, and there has been 74 fatalities since. Property damage since 1917 is estimated at about \$800,000,000. The New England damage from the hurricane of 1938 was perhaps \$250,000,000. This is said to be one of the most destructive storms in all history.

Science News Letter, September 17, 1949

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