

GENERAL SCIENCE

Christmas Science Selection

The joy of giving continues throughout the year if the gift is used rather than cast on a shelf by the 12th Day of Christmas. Your gift can help mold a scientist.

By FORREST L. SNAKENBERG

► NUMEROUS WINNERS at the International Science Fair have mentioned in questionnaires that their first interest in science was the result of a scientific gift—from parents, grandparents, aunts, uncles or family friends. Scientific gifts in these cases paid dividends to the children, the nation, the world. A great deal of satisfaction must have come to those who had given such a far-reaching gift. That satisfaction can be yours.

There are, of course, guidelines to be followed in giving scientific gifts. The very advanced gifts should be reserved for those whose scientific development is well-launched. Small children should have simple and safe gifts.

A wide range of pets are readily available almost everywhere, with even dime stores stocking exotic tropical fish. Unusual pets which also are educational include three mated pairs of live sea horses for under \$5 (1), or a pair of flying squirrels at less than \$15 (2). Youngsters would enjoy watching the miracle of birth, with six quail eggs in their own small electric incubator, also available for about \$5 (3).

To the science student, the tools of research are welcome gifts. For less than \$5, you can give them surplus satellite batteries (4); a fast, clean and safe solid fuel blowtorch (5); a bino-tach connector which secures any prism binocular to any photographic tripod (6); stopwatches or real working stethoscopes (7).

In the \$5 to \$10 bracket, you can get electrostatic generators (7), a portable field microscope with leather case and collapsible tripod legs (8), an underwater beam light useful for skin divers (9), 10-amp variable transformer (4), or a complete vest pocket optical system which is a 30-power microscope or converts to a 2.5 power telescope ideal for theater, field or sky (10).

A bell jar kit, usable for experiments in electrostatics, is available for under \$25 (11), while a Tesla coil capable of lighting a fluorescent tube two feet away, without wires, is less than \$40 (12). A superb four-inch telescope, used by more than 150 schools and observatories, is less than \$50 (13).

Not only do the kits provide experience and understanding of science through the building, but through use of the completed equipment as well. Available kits are many and varied, and only a representative cross section can be listed here.

Five dollars or less can buy Gemini or Mercury space capsules, or a Polaris submarine kit (14), a subscription to THINGS of science monthly kits for a year (15),

a beginner's special rocketry kit (16), or a kit to study moire patterns (12). A modern oil field kit (17) or chemcraft, microcraft, biocraft or mineralogy kits are all available for less than \$10 (18).

From \$15 to \$25 will buy kits teaching fluorescence which is useful in crime detection or stamp collecting (19) or a 200,000-volt electrostatic generator kit (11). A 9-kit complete home science lab and course is available for under \$40 (20). Kits are not necessarily confined to small, inexpensive items. Larger kits costing from \$250 to \$500 can be ordered which supply all the necessary materials to construct a 21-inch color television set, or even an all-transistor electric organ with 10 true organ voices, and banjo, mandolin, and balalaika effects, which can be completely assembled in 50 hours (21).

Reading vs Television

Many of the most worthwhile TV programs are on the educational channels. Old-fashioned TV owners might find a good Christmas gift to be a UHF converter kit, giving them all the educational programs for less than \$20 and a few hours time (8).

A number of books—very good books—are available for under a dollar. One publisher (22) has such intriguing titles as

Principles of Mechanics Simply Explained; Soap Bubbles: Their Colours and the Forces Which Mould Them; Probabilities and Life; Louis Pasteur; Pierre Curie; Famous Bridges of the World; Space and Time in Contemporary Physics; Essays on the Theory of Numbers; Paper Folding for Beginners; How to Use a Slide Rule, and How to Calculate Quickly. Another firm offers Science Projects Handbook; Wonderful World of Science; Projects: Space; The Natural World: A Guide to North American Wildlife; The Chemical Elements and 150 Science Experiments Step-by-Step (15). A good radio firm offers All About High-Fidelity and Stereo; Understanding and Using Citizens Band Radio; Home Intercom Systems, and Radio Amateur Question and Answer License Guide (23). Beleguered parents of the homework brigade will want a new title, New Math for Parents (24). Paperback techniques and the information explosion combine to make a great deal of informative reading available without much cost.

Less than \$5 will bring a considerably wider range of science reading, mostly with hard covers. One "club" offers monthly editions, with the initial title being Man in Space (25), while another such plan has Man and Space for its first offering (26). Both programs are highly recommended. Good guides are available in this price range, such as Field Book of Insects, How to Know the Insects, and Field Guide to the Butterflies (27). Hams will like Radio Amateur Call Book—USA Section (23),



Fremont Davis

GIFT SUBSCRIPTIONS—Gift giving can be continued throughout the year in the form of experimental kits or periodicals.

while another firm has The Electronics of Materials, or The Elements, both of interest to those intrigued by the physical sciences (28).

Among the books over \$5 worthy of mention are Sourcebooks on the Space Sciences and Space Probes and Planetary Exploration offered by one firm (29); and The Century of Science, offered by another (15).

Not to be overlooked are the magazine subscriptions. They help the science-oriented and bring considerable enjoyment the year-round. We might suggest Science News Letter (15), Sky and Telescope (30), and Chemistry (31), among a host of other good selections.

Science for the Entire Family

A few records might be mentioned which serve to educate those interested in nature, or to help identify those eerie sounds which sometimes frighten small children because the sources of the sounds are unknown. For between \$5 and \$10, you might give American Bird Songs, Voices of the Night, or Songs of Insects (32).

In the dollar and under category is a price comparator, computing the true unit price of two comparable products having different weights and prices (33), a visual aid to teach knot tying (34), or a guide to 900 facts concerning the elements (35).

Five dollars or less buys a luminous star finder which can be set for hour and date, or a book of landforms complete with stereoscope viewer for the various forms included (36), a 12- by 19-inch relief map of the U.S. (17), or novel brandy-sniffer shaped glass terrariums in various sizes for appropriate prices (27).

In the \$5 to \$10 bracket, you might choose a 24-hour electric wall clock showing the correct time anywhere, of use to radio amateurs; or a complete home weather station including thermometer, barometer and hygrometer (23).

A home knickknack shelf completely stocked with various scientific items and samples (12) or a 12-inch physiographic relief globe (36) are available in the \$15 range.

This is by no means a complete list, but should provide adequate suggestions in most fields of science, in most price ranges, of items that generally are available in medium and large cities, and the manufacturers or suppliers listed that can either supply the materials or refer queries to local outlets. Because the listing is a service to readers rather than advertising, specific prices have not been listed as these may vary locally. Price ranges, however, have been indicated to give the reader an idea of what is available for about how much.

Index to Suppliers

1. F. F. Marine Life, P.O. Box 626-SL-65, Dania, Fla. 33004
2. L. E. Greeson, 905 N. Monroe St., Arlington 1, Va.
3. G. O. F. Mfg. Co., Dept. CL, Box 152, Savannah, Ga.
4. Esse Radio Co., 368 S. Meridian St., Indianapolis, Ind. 46225
5. Birk Mfg. Co., Niantic, Conn. 06357
6. Harry Ross, 61-L Reade St., New York 7, N.Y.

7. Royal Advertising Corp., Dept. 593, Lynbrook, N.Y.
8. Lafayette Radio Electronics, 111 Jericho Turnpike, Syosset, L.I., N.Y.
9. Country Club Products, 210 West 8th St., Kansas City 5K, Mo.
10. Haverhill's, 465 California St., San Francisco, Calif. 94104
11. Morris & Lee, Dept. NL-10A-65, 1685 Elmwood Ave., Buffalo, N.Y. 14207
12. Edmund Scientific Co., Barrington, N.J. 08007
13. Criterion Mfg. Co., Dept. NL-68, 331 Church St., Hartford 1, Conn.
14. Skyway Models, P.O. Box 66396, Los Angeles 66, Calif.
15. Science Service, 1719 N St., N.W., Washington, D.C. 20036
16. Estes Industries, Penrose 35, Colo.
17. NASCO Science Materials, Fort Atkinson, Wis. 53538
18. Lionel Toy Corp., Hillside, N.J.
19. Strobilite Co., 75 W. 45th St., New York, N.Y. 10036
20. American Basic Science Club, 501 East Crockett St., San Antonio, Texas 78202
21. Heath Co., Benton Harbor, Mich. 49023
22. Dover Publications, Dept. 513, 180 Varick St., New York, N.Y. 10014
23. Allied Radio, 100 N. Western Ave., Chicago, Ill. 60680
24. Sunset House, 166 Sunset Bldg., Beverly Hills, Calif. 90213
25. Doubleday & Co., Science Program Dept. 59-SMX, Garden City, L.I., N.Y.
26. Time-Life Books, Dept. 8321, Time & Life Bldg., Chicago, Ill. 60611
27. Ward's Natural Science Establishment, P.O. Box 1712, Rochester, N.Y.
OR Ward's of California, P.O. Box 1749, Monterey, Calif. 93942
28. Howard W. Sams & Co., Box 68003, Indianapolis, Ind. 46206
29. Van Nostrand, Dept. T-SNL-5, 120 Alexander St., Princeton, N.J.
30. Sky & Telescope, Dept. SNL, Cambridge 38, Mass.
31. American Chemical Society, 1155 16th St., N.W., Washington, D.C. 20036
32. General Biological Supply House, 8200 S. Hoyne Ave., Chicago, Ill.
33. Dyna-Slide Co., 600 S. Michigan Ave., Chicago 5, Ill.
34. Forty Knots, 2112 Linden Lane, Palatine, Ill.
35. Slyd-Rul Co., 1040 West Broadway, Woodmere, N.Y.
36. T. N. Hubbard Scientific Co., Box 105, Dept. SN, Northbrook, Ill.

• Science News Letter, 88:314 November 13, 1965

Do You Know?

Malaria strains may be developing resistance to *synthetic* antimalarial drugs.

A human *knee* may be able to strike a padded surface with 1,400 or more pounds force before skeletal injury occurs.

Older hen's eggs are preferred by processors because the whites are *thinner* and consequently more valuable for processing into liquid, dried and frozen products.

Ipecac syrup will be allowed to be sold without prescription to make it readily available for first aid use after medical supervision to induce vomiting in certain kinds of poisoning.

• Science News Letter, 88:315 November 13, 1965

Save this ad and re-read it before you buy:

- 1 Binoculars
- 2 Spotting Scope
- 3 Telescope

YOU GET ALL 3 IN THIS NEW COMPACT "MONOCULAR" SYSTEM



The "BICKY" is an achievement of Japan's incomparable optical industry. This new 10-power instrument comes equipped with pistol-grip handle and an adjustable professional-style table-top tripod, complete with a 360° two-plane panning head. There's even a car window adapter so your Monocular can go along on scenic drives. ■ The "BICKY" is a precision prismatic telescope, individually collimated and hand finished. Do not confuse it with mass-produced tubular (refraction) telescopes. ■ 10x 30 mm. coated Kellner achromatic optics. Light weight magnesium construction throughout. ■ In addition to the (tele) scope and the attachments you get a nice soft carry-

ing case and handstrap, which makes your "BICKY" as portable and convenient as a miniature camera (5½ inches long—weighs less than 7 ozs.) All this comes fitted beautifully in a foam-lined gift box. ■ Unless you want to buy binoculars, and a spotting scope complete with tripod, and a telescope — this new "BICKY" MONOCULAR SYSTEM is an ideal 3-in-1 instrument for making everything you look at appear 10 times bigger and better: birds, deer, outfielders, waterfalls, boats, mountain tops—The Heavens!

OPEN YOUR EYES TO 10 TIMES MORE—ORDER NOW . . .

Haverhill's, 465 California St., San Francisco, Calif.
Please mail me the BICKY Monocular System, complete with attachments, in foam-lined gift box. (Refund guaranteed)

I enclose \$24.75 plus \$1.00 for postage and insurance.
 California Residents Bill Diners' Club Acct. # _____
Add 4% Sales Tax Bill Amer. Expr. Acct. # _____

Name _____
Address _____
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GOODBYE FLAB!

Doctors at the famous Max-Planck Institute have discovered a slimming system that reduces waistlines 2 inches in 30 days . . . puts you back in shape fast. No sweat, strain or tiring repetition. Just 10 simple, motionless Isometric Contractions. Acclaimed internationally for people of all ages by scientists, coaches, athletes and actresses. Free illustrated information about new guaranteed technique. Write AWARD-WINNING-MINUTE-A-DAY METHOD, Dept. H, 37 Centuck Station, Yonkers, N. Y. 10710.