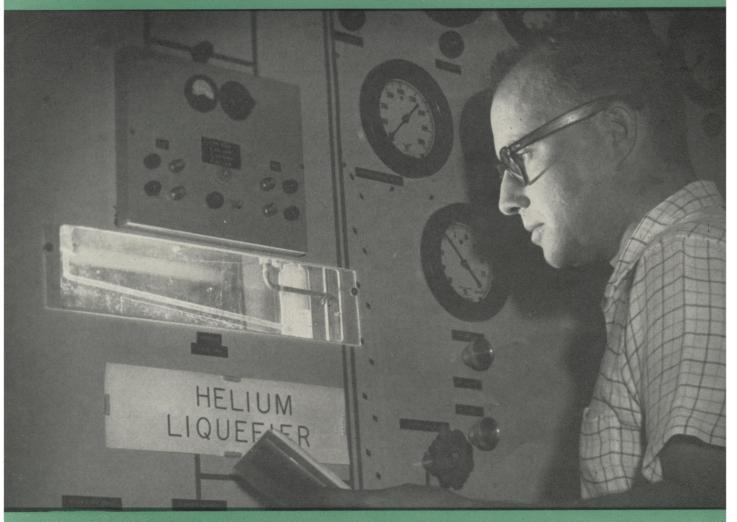


# SCIENCE NEWS LETTER



R

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Valuable Liquid

See Page 211

A SCIENCE SERVICE PUBLICATION

## Build Your—SCIENTIFIC LIBRARY—

#### **UP TO 60%** DISCOUNT

293. THE NEW PSYCHOLOGY OF LEADER-SHIP. By D. A. & E. C. Laird. Illustrated. A wealth of down-to-earth guidance, based on scientific research, which shows how executives, personal directors, foreman and supervisors can put this information to best use, with numerous case histories, examples. Pub. at \$4.00.

Pub. at \$4.00.

413. 1001 WAYS TO REPAIR AND IMPROVE
YOUR HOME. By George Daniels. Illustrated with
hundreds of photographs & diagrams. New complete
guide to every home repair and improvement, giving
clear step-by-step instructions, showing the best,
quickest and cheapest way to every job and how to add
beauty and value to the home, inside and out, Pub
All \$4.95.

Only 3.20

138. TREASURY OF AMERICAN GARDENS.
By James F. Fitch & F. F. Rockwell. With 250 illustrations, 100 in color. In this handsome, larish volume, 10½ x 13, two distinguished writers join forces with the leading photographers to present, in words and pictures, the great gardens of America from the Atlantic Seaboard to Hawaii. A few of the gardens are public but the large majority are private ones and seldom seen. The illustrations are magnificent and there is a wealth of ideas for landscaping and planting, with special consideration of Gardens Under Glass—Terraces and Patios—Rock Gardens—Water Landscapes—Specialty Plantings—Wildflowers, Pub. at \$12.50.

330. ANIMALS ALL. Ed. by Peter Skelton. Illustrated with 16 drawings by Albert Orboan. Excellent selection of fifteen stories in which the animals themselves are heroes—written by outstanding authors and containing much interesting lore. Pub. at \$3.75.

257. TINKERS AND GENIUS: Yankee Inventors.
By Edmund Fuller. That amazing era of the 19th century when Yankee inventiveness was at its peak, spawning the tools, machines and techniques which changed the face of America—with fascinating portaits of the strange characters and wonderful anecdotes. Pub. at \$4.50.

dotes. Pub. at \$4.50.

259. JOHN BARTRAM AND THE EARLY NATURALISTS: New Green World. Illustrated. Full of the wonder and excitement of the unexplored wilderness of America of the 18th century, and the group of botanists whose attitudes changed the country's thinking about the preservation of the world of nature. Pub. at \$4.50.

H111. LIFE UNDER THE MICROSCOPE—With 460 Captioned Photographs, 4 Full-Page Color Plates. By O. Jirovec, et al. A beautiful volume deroted to the microscope and its contribution to man's knowledge and control of nature. Each page of this informative and entertaining book contains superb photographs—many full-page size—illustrating the infinite variety of forms found in nature's works of art, ranging from the familiar six-point snowfiske to the striking shapes of magnified inorganic substances as well as algae, fungi, moulds, lichens, moses, ferns, sponges, corals, insects, even the structure of an dividual organs in the higher animals and urgans in the higher names and electron microscopes, pioneers in microscopy, etc. 9" x 12", imported.

329. ANIMAL LEGENDS. By Maurice Burton. Illustrated with 20 drawings. The well-known authority on animal behavior examines some long-established animal legends—full of incidents and observations that are unusual and extraordinary, this book is one of the most original and fascinating books on the subject. Pub. at \$4.95.

Pub. at \$4.95.

H208. INDUCED DELUSIONS. By C. H. Campbell, M.D. A provocative study of Sigmund Freud, by a distinguished disciple who broke with Freudianism, and came to regard it as a theory with greater emotional than scientific validity. Pub. at \$4.00.

Sale 2.39

Sale 2.39
323. THE STORY OF THE GULF STREAM:
River In the Sea. By Hans Leip. Illustrated with
23 photographs, maps and drawings. A rich and
enormous range of information anecdote and legend
relating to the Gulf Stream and the achievements and
histories of those countries in its path from the early
Mexican civilization through the 16th century European colonizations and explorations up to the present.
Pub. at \$3.75.

6397. ANOMALIES AND CURIOSITIES OF MEDICINE. By George M. Gould, M.D., and Walter L. Pyle, M.D. An encyclopedic collection of rare and extraordinary cases, and of the most striking instances of abnormality in all branches of medicine and surgery, derived from an exhaustive research of medical literture from its origin to the present, abstracted, annotated and indexed. 12 half-tone plates and 295 illustrations in the text. 982 pp. Pub. at \$12.50.

263. BY SAIL TO THE SOUTH SEAS: Cloud of Islands. By W. I. B. Crealock. With 36 illustrations and maps. Enthralling record of a voyage into strange, exotic seas in a 70-foot ketch—from the l'anama Canal to the Pacific, to battle twice through the doldrums to Galopogos Islands, through 3,000 miles of ocean to the South Seas and eventually to Tahiti—fascinating adventure, all told with charming humorous vivacity. Pub. at \$4.00. Only 2.26

WHERE WINTER NEVER COMES. BY Marston Bates. The author of "The Nature of Natural History" tells about the beauty of life in the tropics as well as the possible difficulties. He describes places, climate, customs, food and social background. 35 illustrations. Pub. at \$3.50.

B1066. SCIENCE AND PHILOSOPHY. By Alfred North Whitehead. The 20th century has produced few men whose achievements in philosophy can surpass those of Alfred North Whitehead. Here, sparkling with wisdom and humor, is a cross-section of a distinguished career; articles on immortality, the dangers of the past, science and the future, etc. Pub. Only 3.20

at \$4.75. Only 3.20

H213. VESALIUS—The Anatomy Illustrated. Ed.
by J. B. Saunders and Charles B. O'Malley. A
beautiful modern edition of one of the most remarkable works in the whole history of science, are and
printing. Included are 96 full-page facsimiles of
Vesalius' powerful and dramatic woodcuts of the human figure, with annotations, a discussion of the
plates and a biographical sketch of the great 16th
century physician-artist. "A great classic, a scholarly work and a beautiful one."—N. Y. Times.
\$10.00. Sale 8.98

H109. CHEMISTRY MADE EASY. By C. T. Snell and F. D. Snell. This extremely well-written and thorough self-teaching course covers the three branches of chemistry—general, inorganic and organic. The basic information is clearly presented and copiously illustrated, with practical, everyday experiments and tables for convenient reference. Originally published in 3 volumes at \$20.00 . . now completely revised and rewritten in one compact volume. List price \$10.00. Special pre-publication offer 7.95

H31. HORTICULTURE IN AMERICA to 1860—
A History. By U. P. Hedrick. Story of the development of fruits, flowers and vegetables in each section of the U. S. Describes early gardening, herb culture, orchards and truck farming, plant breeding, fashions in foods and flowers; the work of Washington and Jefferson, the Quakers, French, Dutch, Swedes, et al. 1810s. Pub. at \$7.50.

Illus. Pub at \$7.50.

H234. ENGINEERING INSPECTION MANUAL.
BY H. A. Roy. Every important method described and illustrated—bow to use inspection tools and gauges, make setups, check castings, etc.; time-saving tables, hints, and short cuts. Pub. at \$5.73.

Special 4.59

4563. THE "THINK CLEARLY!" SERIES. A 10-volume home-study course in logic and celarthinking showing how you can utilize these vital tools in everyday life. 10 softbound books cover scientific and efficient thinking, keys to rapid learning, etc. Nearly 500 p. Illus.

The entire set, special \$3.00

HGS. MATHEMATICAL TABLES AND FOR-MULAE, by F. J. Camm. The standard mathe-matical symbols, interest tables, weights and measures, logs and antilogs, progressions, conversion tables, laws of physics, formulae in algebra and calculus, etc. Es-sential for the home reference shelf, as well as for engineers, craftsmen, students, etc. Pub. at \$2.75. Sale 2.41

7129. THE MACMILLAN WILD FLOWER BOOK. By Clarence J. Hylander. A valuable guide to wild flowers, here is an art treasure to cherish through the years. It contains an outstanding collection of glorious watercolor reproductions of 426 wild flowers with concise commentary on each one. Pub. at \$15.00. Only 8.95

4850. FIELD BOOK OF NORTH AMERICAN MAMMALS. By H. E. Anthony. From the swift night-runners that stalk the snowbound timberlines to the animals that fight for life in our hot desert-lands —this invaluable book contains descriptions of every known mammal north of the Rio Grande. 32 full-color plates; over 200 black-and-white illustrations. 644 p. Pub. at \$6.00. Only 3.95

644 p. Pub. at \$6.00. Only 3.95 FBT. FIELD BOOK OF AMERICAN TREES AND SHRUBS. By F. Schuyler Mathews. A ready means of identifying the native trees and shrubs throughout the United States. This is an ideal book to enhance your nature enjoyment. 554 pages. 16 color plates. 130 line drawings. 50 crayon drawings.

8239. NEW WAYS TO BETTER SIGHT. By Dr. Harris Gruman. Everything you need to know about your eyesight, its improvement and retention. Latest information on improving sight after forty, the visual effects of television, eye exercises, etc. Illus. Pub. at \$3.00. Only 1.98

FB17. FIELD BOOK OF PONDS AND STREAMS. By Ann Haven Morgan. A complete guide to the plants and animals that live in fresh water—their appearance, life and habits. Suggestions are made on the finding and collecting of water animals, and their care in aquaria. 464 pages. 23 color plates. 314 line cuts. 42 protographs.

314 line cuts. 42 protographs.

FBS. FOREST TREES OF THE PACIFIC COAST.

By Willard Ayres Eliot. A brief account of the characters, distribution and habitat of the trees native to Alaska, British Columbia, Washington, Oregon, Idaho, northern California, and eastward to the Western Slopes of the Rockies. 565 pages. 248 photographs. 13 line cuts, large 12mo. 7.50

ern Slopes of the Rockies. 565 pages. 248 photographs. 13 line cuts, large 12mo. 7.50
G1. JUNGLE MISSION. By Rene Riesen. Illustrated with 13 photographs and 2 maps. Strange adventures of a young French officer among a primitive tribe in Indochina. Pub. at \$3.00. 1.62
G2. FROM COPENHAGEN TO OKANOGAN. By N. E. Fries. With 43 illustrations. The epic story of the pioneer fortitude in the Okanogan Valley in Washington—real Americana along the banks of the mighty Columbia. Pub. at \$5.00. 1.62
G3. IN ALASKAN WATERS. By Alfred Wolfe. With 27 illustrations. The life of the deep-sea fishermen in the Puget Sound, and the glacier-rimmed inlets of Alaska. Pub. at \$3.00. 1.62
G4. NATURE WHEEL SURDERS BY NORSENER BY NATURE WHEEL SURDERS BY SURGERS BY S

1.62

G4. NATURE WHEEL. Sponsored by the National Audubon Society, this is the new and interesting game for children—24 species of birds in color, arranged on a cardboard with special pointers and answers. Pub. at \$1.00.

B1077. THE FUNDAMENTAL PRINCIPLES
OF HYPNOSIS. By Stanley I. Krebs. Introduction by Dr. Milton V. Kline. The clearest
and most concise work on hynosis and hynotic
methods. Pub. at \$3.00. Only 2.60

H165. REPTILE LIFE—145 Photo-Illustrations, 5 in Full Color. By Z. Vogel. A large, handsome book capturing all the variety, fascination and unsuspected beauty of the reptile world. Here, in fine plates, scientific facts and popular fallacies, are the chameleons, turtles, tortoises, crocodiles and alligators, as wel as great pythons, cobras, boas, deadly rattlesnakes and vipers—their habits and habitats, origin and evolution, etc. 8 ½ " 11" import. Pub. at \$8.75.

5331. PREHISTORIC ANIMALS. By Dr. J. Augusta and Z. Burian. The great and fearsome beasts of prey, extinct flowers, strange sea creatures—recognizable ancestors of many of today's animals, birds and fish—from earliest plant life to the emergence of Man—captured in 55 full-color paintings. The extensive text brilliantly blends the artist's skill with up-to-date scientific knowledge. This unique, absorbing, imported book served as the basis for a film that won the Grand Prix at the Venice Film Festival, 10 ½" x 13 %". Pub. at \$12.50.

H184. THE MACHINIST DICTIONARY. By F. H. Colvin. Thousands of terms, definitions, charte, tables of standard count instructions—from ASC Screw Threads of irrottion pactom with nundreds of professional prints drawings, diagrams, and how-to photographs. Essential for the apprentice, the perfect reference for the busy master. \$7.50.

H137. POPULAR MATHEMATICS. By Denning Miller. Beginning with primitive man and his ability to count off his flocks, the eight mathematical branches from arithmetic to calculus are here explained for actual enjoyment, as well as practical understanding and application. This intriguing blend of simple-as-can-be instruction and historical background, from Plato to Einstein, is a rare treat for all who are involved with mathematics by vocation or ovccation, the perfect Math book for all. 616 pages, illustrated. Pub. at \$5.00.

Illustrated. Pub. at \$5.00. Now 4.79 H179. Rain, Sun, Storm—ON THE WINGS OF THE WIND. By D. C. Holmes and M. Pitkin. The fascinating story of temperature, pressure, humidity, air masses and other weather phenomena and how they have influenced history and civilization from the days of sun worship to radar forecasting. 25 photos. Pub. at \$3.75.

Fulb. at \$5.40.

8ale 2.46

FB12. Field BOOK OF COMMON ROCKS AND

MINERALS. By Frederick B. Loomis. For identifying the rocks and minerals of the United States
and interpreting their origins and meanings. 370

pages. 50 color illustrations. 50 line cuts. 50

photographs.

5947. FIELD BOOK OF INSECTS. By Frank E. Lutz. All of the principal families, many of the genera and most of the commonly observed species of insects in the U. S. and Canada, recorded in a way to make recognition relatively easy. Much information regarding the habits of air, water, earth and underground insects. 100 plates, illustrating almost 800 specimens, many in color.

405. HOW AND WHEN TO CHANGE YOUR JOB SUCCESSFULLY. By Walter Lowen. The internationally famous placement expert answers every question as to whether the job-holder is to stay on, hoping for promotion, or to move on to greener pastures—comprehensive, practical, specific and farreaching volume. Pub. at \$2.95.

reaching volume. Pub. at \$2.90.

166. ALBERT EINSTEIN'S IDEAS AND OPINIONS. Here is the most definitive collection of Einstein's popular writings gathered under his own supervision, such subjects as relativity, atomic war or peace,
religion, science, human rights, economics, government, etc. Pub. at \$5.00.

Only 4.25

	titles I have numbered b 3% NYC Sales Tax (for re				
Pi	RINT NAME AND ADDRES	S CLEARLY. TH	IS IS YOUR SH	IPPING LABEL	
	FIELD CO., INC. ., N. Y. 3, N. Y	<b>7.</b>		Dept.	SL-109-A
ADDRESS					
STATE					

# Make over 200 Small Computing and Reasoning Machines with . . .

## **BRAINIAC®**

### NEW 1959-60 ELECTRIC BRAIN CONSTRUCTION KIT

EQUALS THE ORIGINAL GENIAC® electric brain construction kit (1955) PLUS many improvements and additions: over 600 parts—including 116 improved patented wipers so that all switches work well. Instead of covering only 33 machines, the BRAINIAC K18 Kit gives full specifications for 201 computing, reasoning, arithmetical, logical, puzzle-solving and game-playing machines . . . all 33 GENIACS (1955), 13 TYNIACS (1956), and 155 BRAINIACS (1957-58-59), etc.

THIS IS BRAINIAC! With our Brainiac Kit K18, you can build over 200 small electric brain machines and toys which "think," compute, reason, and display intelligent behavior. Each one works on a single flashlight battery . . . is FUN to make, FUN to use and play with, and TEACHES you something new about electrical computing and reasoning circuits. All connections with nuts and bolts-no soldering required. Originated by Berkeley Enterprises, the Brainiac K18 kit is the result of 10 years' design and development work with miniature mechanical brains including: Geniac (see "Geniacs: Small Electric Brain Machines and How to Make Them" by Edmund C. Berkeley, 64 pp., published by Geniac Project, a partnership with Oliver Garfield discontinued September 1955), Tyniac (1956), Relay Moe (automatic relay machine playing tit-tat-toe—pictured in Life Magazine, March 19, 1956), Simon (miniature automatic digital computer with 129 relays-see "Simple Simon" by E. C. Berkeley in Scientific American, November 1950), Squee (electronic robot squirrel—see "Light Sensitive Electronic Beast" by E. C. Berkeley in Radio Electronics, December 1951), etc.

### WHAT COMES WITH YOUR BRAINIAC K18 KIT—Complete Plans, Instructions, Explanations & Hardware:

- Every part needed to build Geniacs, Tyniacs, Brainiacs—over 600 pieces including control panel, multiple switch discs, jumpers, improved wipers, bulbs, sockets, washers, wire, battery and special tools.
- Complete descriptions of 201 experiments and machines.
- Over 170 circuit diagrams including 46 exact wiring templates.
- Manual "Brainiacs—Small Electric Brain Machines—Introduction and Explanation" by Edmund C. Berkeley, 1959.
- "Introduction to Boolean Algebra for Circuits and Switching" by Edmund C. Berkeley.
- "How to Go from Brainiacs and Geniacs to Automatic Computers" by Edmund C. Berkeley.
- List of references to computer literature including "Minds and Machines" by W. Sluckin, published by Penguin Books (Baltimore), 1954, 233 pages, and other references.

only \$18.95 ... MORE VALUE . MORE FEATURES

WHAT CAN YOU MAKE WITH BRAINIAC KIT K18? Over 200 machines including—Logic Machines: Syllogism Prover, Intelligence Test, Boolean Algebra Circuits, Doug-



las MacDonald's Will Analyzer, A Simple Kalin-Burkhart Logical Truth Calculator, Diagnosing Motor Car Trouble, etc. GAME-PLAYING MACHINES: Tit-Tat-Toe, Nim, Wheeled Bandit, Black Match, Sundorra 21, etc. COMPUTERS: To add, subtract, multiply or divide using decimal or binary numbers, Forty-Year Calendar, Prime Number Indicator, Money-Changing Machine, etc. CRYPTOGRAPHIC MACHINES: Coders, Decoders, Lock with 15,000,000 Combinations, etc. PUZZLE-SOLVING MACHINES: The Missionaries and the Cannibals, Age-Guessing Machine, Submarine Rescue Chamber, Daisv Petal Machine, Fox-Hen-Corn & Hired Man, Uranium Space Ship and the Space Pirates, The Three Monkeys Who Spurned Evil, General Alarm at the Fortress of Dreadeerie, etc. QUIZ MACHINE: How to Tell an Aardvark from an Armadillo, The Waxing and the Waning Moon, Polar Air Routes, history, geography, trigononmetry, grammar, statistics, calculus, etc.

WHO IS EDMUND C. BERKELEY? Author of Giant Brains or Machines That Think, Wiley, 1949, 270 pp. (15,000 copies sold); Author of Computers: Their Operation and Applications, Reinhold, 1956, 366 pp.; Author of Symbolic Logic and Intelligent Machines, Reinhold, 1959, 203 pp.; Editor & Publisher of the magazine, Computers and Automation; Maker and Developer of small robots; Fellow of the Society of Actuaries; Secretary (1947-53) of the Association for Computing Machinery; Designer of all the Tyniacs and Brainiacs, more than half of the 33 Geniacs (1955); Designer of the patented Multiple Switch Disc and other features in the 1955 Geniac kit.

BRAINIAC KIT (1959-60 MODEL) K18... the kit with limitless possibilities—backed by an organization of 12 years standing in the computer field—\$18.95. (For shipment west of Mississippi, add 80¢; outside U.S., add \$1.80.)

7-Day Full Refund Guarantee If Not Satisfactory

MAIL THIS COUPON OR A COPY OF IT

BERKELEY ENTERPRISES, Inc.

815 Washington St., R205, Newtonville 60, Mass. Please send me Brainiac Kit K18. (Returnable in 7 days for full refund if not satisfactory—if in good condition.) I enclose \$...... in full payment.

My name and address are attached

## FREE TO YOUNG ADULTS, aged 12-16, EITHER OF THESE VALUABLE "PORTABLE LABORATORII

to introduce a unique program of firsthand experiences in science



RIGINALLY CREATED for the children of 50,000 working scientists and teachers enrolled in The Library of Science, the Young Adults' Division is now open for the first time to other gifted young people who wish to share in a unique educational program.

As one of this select group of 12 to 16 year old boys and girls, The Library of Science will systematically offer you the finest science materials—kits, instruments, equipment, books-all pre-tested, age-graded and carefully balanced to place equal emphasis on the basic areas of science from astronomy to mathematics, from nature to weather study.

To introduce you to the benefits of this program, you are invited to choose as your Free Membership Gift either of the valuable sets illustrated. Your only obligation is to take 3 of the monthly Selections at reduced Member's Prices (often as low as \$3.95)—one Selection to be chosen now from the 4 listed below, and the other 2 at

#### BEGIN MEMBERSHIP WITH ONE OR MORE OF THESE PRE-TESTED, AGE-GRADED SELECTIONS

PRE-ELECTRICITY PHYSICS KIT.

Materials for over 100 experiments
and projects demonstrating the
basic principles of magnetism and
static electricity. Includes alnico
magnets, compasses, neon bulb,
two 48-pg. manuals.

List Price \$5.95
Member's Price \$4.50

LIGHT AND COLOR KIT. Two scientight AND COLOR KIT. I wo scientific instruments — Spectroscope and Light Polarizer—make possible dozens of experiments in spectrum analysis, wave nature of light, stress patterns, etc. Two manuals total 44 pages.

List Price \$6.20 Member's Price \$4.95

DR. EDWARD TELLER SPEAKS. 12" long-playing (33½ rpm) record presents the famous physicist in authoritative, non-technical discussions of The Size and Nature of Universe and The Theory of of Univers. Relativity.

List Price \$5.95 Member's Price \$4.95

FRONTIERS IN SCIENCE, Edited by Edward Hutchings, Jr. Pauling, Oppenheimer, Hoyle, DuBridge, Beadle, 25 other scientists explain the latest findings in the major areas of research

Publisher's Price \$6.00 Member's Price \$4.95

any time during the next 12 months. Money-back guarantee on all Selections.

ALSO FREE to Y. A. D. members - Science World, famous bi-weekly magazine for young adults. Contains articles by leading scientists; news of research developments and educational opportunities; suggestions for experiments, projects, field trips, puzzles and games.

#### **EDITORIAL ADVISORY BOARD**

HARRISON BROWN Professor of Geochemistry California Institute of Technology

Executive Secretary National Science Teachers Association

ROBERT H. CARLETON
Executive Secretary
National Science
Teachers Association
To Medical Research

HENRY MARGENAU Professor of Physics and Natural Philosophy Yale University

YOUNG ADULTS' DIVIS 59 Fourth Avenue, New						
immediately the Free Me the first Membership Sele- indicated alongside, plus the bi-weekly publication has signed below, underst is to take three more Sele duced Member's Price. Pl  MEMBE	mbership ction show postage. A n, Science ands that ections du ease bill n RSHIP G	DULTS' DIVISION, and send me Gift indicated. With it, also send an and bill my sponsor at the price Also, open my free subscription to a World. My adult sponsor, who the only obligation of membership ring the next 12 months, at the reny adult sponsor, for all Selections.				
		CALCULO Analog Computer Kit				
FIRST MEMBERSHIP SELI	CTION					
(fill in)	1	(fill in)				
ENROLL NEW MEMBER BELOW						
Member	Age					
Address						
CityState						
SPACE BELOW FOR ADULT SPONSOR						
Name						
Address						
City	State					