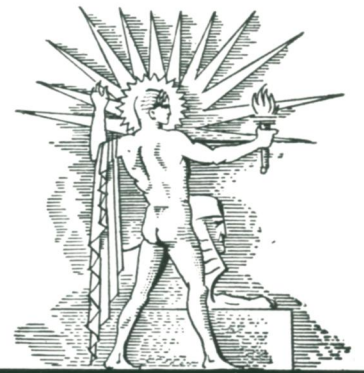


PRICE  
15¢

# SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •



OCTOBER 8, 1932

Autumn Ennobles Even Weeds

See Page 225

A

SCIENCE SERVICE PUBLICATION

# SCIENCE NEWS LETTER

VOL. XXII

No. 600

The Weekly  Current  
Summary of Science

Published by

## SCIENCE SERVICE

The Institution for the Popularization of Science organized under the auspices of the National Academy of Sciences, the National Research Council and the American Association for the Advancement of Science.

Edited by WATSON DAVIS

Subscription rates—\$5.00 a year postpaid; 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 old as well as new address.

Advertising rates furnished on application.

### Board of Trustees of Science Service

*Honorary President*, William E. Ritter, University of California. Representing the American Association for the Advancement of Science, J. McKeen Cattell, *President*, Editor, Science, Garrison, N. Y.; Burton E. Livingston, Johns Hopkins University, Baltimore, Md.; Raymond Pearl, Director, Institute for Biological Research, Johns Hopkins University, Baltimore, Md. Representing the National Academy of Sciences, W. H. Howell, *Vice-President and Chairman of Executive Committee*, National Research Council, Washington, D. C.; R. A. Millikan, Director, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; David White, Senior Geologist, U. S. Geological Survey. Representing National Research Council, Vernon Kellogg, Secretary Emeritus, National Research Council, Washington, D. C.; C. G. Abbot, Secretary, Smithsonian Institution, Washington, D. C.; Harrison E. Howe, Editor of Industrial and Engineering Chemistry. Representing Journalistic Profession, John H. Finley, Associate Editor, New York Times; Mark Sullivan, Writer, Washington, D. C.; Marlen E. Pew, Editor of Editor and Publisher, New York City. Representing E. W. Scripps Estate, Harry L. Smithton, *Treasurer*, Cincinnati, Ohio; Robert P. Scripps, Scripps-Howard Newspapers, West Chester, Ohio; Thomas L. Sidlo, Cleveland, Ohio.

### Staff of Science Service

Managing Editor, Watson Davis; Staff writers: Frank Thone, Emily C. Davis, Jane Stafford, Marjorie Van de Water, J. W. Young; Librarian, Minna Gill; Sales and Advertising Manager, Hallie Jenkins.

Copyright, 1932, by Science Service, Inc. Reproduction of any portion of the SCIENCE NEWS LETTER is strictly prohibited since it is distributed for personal, school, club or library use only. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service, details and samples of which will gladly be sent on request.

Members of the American Association for the Advancement of Science have the privilege of subscribing to the SCIENCE NEWS LETTER at the reduced price of \$3 per year. Application for this privilege should be accompanied by privilege card obtained from the Permanent Secretary, A. A. S., Smithsonian Institution Building, Washington, D. C.

Publication Office, 1930 Clifton Ave., Baltimore, Md. Editorial and Executive Office, Constitution Ave. at 21st St., N. W., Washington, D. C.

Address all communications to Washington, D. C. Cable address: Scienservc, Washington.

Entered as second class matter October 1, 1926, at the post-office at Baltimore, Md., under the act of March 3, 1879. Established in mimeographed form March 13, 1922. Title registered as trade-mark, U. S. and Canadian Patent Offices.

?

## DO YOU KNOW THAT

?

Property loss per capita from fires in America is almost double what it was twenty years ago.

Some kinds of bananas that grow in the Orient are so rich in starch that they are used for meal.

In the region of the West Indies are found the largest American eels, that grow to be as long as seven feet.

Art objects imported into Germany are now fumigated, lest they contain insect pests or molds which might damage other art treasures.

A government biologist has received a prize of \$100 for a humane trap which captures and holds birds and animals without injury to them.

For its courtship, the Australian bower-bird builds a bower of arched twigs in the forest and gaily decorates it with bright shells, feathers, and flowers.

The difficult journey across the Sahara desert, a distance of 1,700 miles from north to south, has been achieved by two young Englishmen in a little over four months.

Florida may add limes to her citrus fruit products, if experiments prove commercially profitable.

Berries of some sumacs are used as food in Japan, but some other species of sumac are poisonous even to the touch.

A scientist finds that the quantity of wool produced by a sheep depends to a considerable extent on the feed the sheep gets.

Mutton is the principal meat of the Navajo Indians from childhood, and they show little interest in a change of meat diet.

Storm-warnings are telephoned or telegraphed by the U. S. Weather Bureau to more than 300 points, including all important ports.

Comparing the teeth of modern college students and primitive Indians, two University of California professors found in the students a tendency toward increase in the overbite of the upper front teeth: in other words, the human race is apparently becoming more "ratty," in its profile.

## WITH THE SCIENCES THIS WEEK

Curiosity arousing questions for the teacher and general reader. Book references in italic type are not sources of information of the articles, but are references for further reading. Books cited can be supplied by Librarian, Science Service, at publisher's price, prepaid in U. S.

### ARCHAEOLOGY

What was the capacity of Antioch's hippodrome? p. 223.

### ASTRONOMY

How many asteroids are there? p. 229.  
How many planets are visible in the October evening skies? p. 227.  
How many times has Brooks' comet been seen from the earth? p. 228.

### BACTERIOLOGY

Does heat or electrochemical effect pasteurize milk in the electrical process? p. 223.  
How long have *Serratia marcescens* been known to live? p. 227.

### BOTANY

What are three important varieties of wild grapes? p. 232.

### CHEMISTRY

What is patina? p. 224. *The Story of Copper—Watson Davis—Century, 1924, \$3.*  
What is the new cost of crystalline carotene? p. 229.

### ENGINEERING

Is the conductivity of sodium for electricity greater than the conductivity of copper? p. 231.

### EVOLUTION

How many toes and fingers had the common ancestor of mammals? p. 224.

### GEOLOGY

How much rock is needed now for age analysis? p. 228.

### MEDICINE

What are centrosomes? p. 228.  
Will chaulmoogra oil check tuberculosis? p. 228.

### METEOROLOGY

How many West Indian hurricanes have there been this season? p. 229.

### PHOTOGRAPHY

Is "refrigeration" of photographic plates for ordinary use necessary? p. 223.

### PHYSICS

What is thought to be the "simplest system" from which cosmic rays may be emitted? p. 223.

### PLANT PHYSIOLOGY

What are carotinoids and anthocyanins? p. 229. *The Green Leaf—D. T. MacDougal—Appleton, 1930, \$2.*

### PUBLIC HEALTH

In what part of the country are breeding aviaries infected with psittacosis? p. 224.  
Should the cancer death rate be high or low in a country with poor health facilities? p. 225. *Cancer—Willy Meyer—Hoerber, 1931, \$7.50.*

### SEISMOLOGY

When did Knossos thrive? p. 235. *Our Mobile Earth—Reginald A. Daly—Scribner's, 1926, \$5.*



SIR ISAAC NEWTON

His writings supply material for two Classics of Science.

# Words of Famous Men

LIKE THEIR DEEDS, the words of famous men contain inspiration for most normal humans privileged to know them. Just imagine how thrilling it would be to turn the pages of history back to see for yourself the making of scientific discoveries that have changed the world—next best is to read of these achievements in the words of men whose names have become immortal—to get first-hand, information that reaches most people only after it has been rewritten from textbook to textbook.

That is inspiration in the original. And it has been made available to you from the original writings of scores of famous scientists. All foreign works are translated for you into English and all are available at unusually reasonable prices. THE SCIENCE NEWS LETTER has accomplished this by assembling a collection of illustrated reprints of many of the world's most choice scientific papers.

These Classics of Science, contained in antedated issues of the NEWS LETTER, may now be ordered by you from a convenient classified list. Read carefully the complete index on this and the next page. See how many great names it contains. Then note in the coupon the classics you would like to have, clip and mail with your remittance. Act promptly, the quantity is limited.

**TEACHERS:** Illustrations with the Classics (practically all carry one picture and some have two) increase their effectiveness for classroom use. Let your students see how the principles they are studying were first expressed by the discoverers. Stimulate their interest. Give them the thrill of the original.

Author	Subject	SNL No.
<b>PHYSICS</b>		
Andrews	From Gas to Liquid (Critical Point)...	581
Archimedes	Specific Gravity (Hieron's Crown)....	368
Brown	Brownian Movement .....	483
Bunsen & Kirchhoff	Chemical Analysis by Spectroscope...	359
Daguerre	Daguerrotype (Photography) .....	374
Davy	Safety Lamp .....	347
Dulong & Petit	Specific Heat/Atomic Weight .....	522
Eastman	Early Steps in Photography .....	572
Einstein	Electrodynamics of Charged Bodies (Relativity) .....	514
Faraday	Induction Coil .....	338
Foucault	Velocity of Light.....	598
Fourier	Analytic Theory of Heat.....	496
Franklin	Electrical Experiments .....	444
Franklin	Leyden Jar .....	538
Gilbert	Magnetic Dipping Needle.....	354
Helmholtz	Harmony in Music.....	364
Henry	Electromagnetic Engine .....	378
Henry	Induction of Electric Current .....	543
J. Herschel	Early Steps in Photography .....	572
Wm. Herschel	Heat of the Spectrum.....	561
Hertz	Electric Waves .....	372
Humboldt	Unity of the Universe.....	491
Kelvin (Thompson)	Carnot Cycle .....	387
Kennelly	Kennelly-Heaviside Layer .....	458
Kirchhoff & Bunsen	Chemical Analysis by Spectroscope...	359
Lorentz	Relativity .....	361
Maxwell	Heat is Motion (Maxwell's "Demon")	589
Michelson	Interference .....	389
Millikan	Charge on Electron.....	507
Moseley	Atomic Numbers .....	416
Newton	White Light .....	344
Nicol	Nicol Prism .....	355
Oersted	Magnetism From the Electric Current	567
Petit & Dulong	Specific Heat/Atomic Weight .....	522
Preece, Fleming and de Forest	"Edison Effect" and Electric Tube....	550
Prout	Prout's Hypothesis .....	433
Roentgen	Discovery of X-Rays.....	473
Rumford	Heat from Friction.....	393
Thompson (Lord Kelvin)	Carnot Cycle .....	387
Torricelli	Torricellian Vacuum .....	436
Van't Hoff	Stereoisomerism of Crystals.....	530
Volta	Electric Battery .....	349
Wedgwood & Davy	Early Steps in Photography .....	572
Wilkins	Perpetual Motion .....	471
Young	Color Vision .....	401
Young	Theory of Light .....	447

## CHEMISTRY

Agricola	Assaying Lead and Tin.....	587
Allison & Murphy	Element 87 .....	493
Arrwedson	Discovery of Lithium.....	493
Arrhenius	Dissociation .....	342
Berzelius	Blowpipe Analysis .....	370
Berzelius	Discovery of Thorium .....	570
Berzelius	Isolation of Silica .....	587
Boyle	Preparation of Phosphorus .....	592
Bunsen	Discovery of Rubidium.....	493
Bunsen & Kirchhoff	Discovery of Cesium .....	493
Cavendish	Hydrogen (Inflammable Air) .....	399
Cleve	Discovery of Thulium and Holmium...	535
Coster and Hevesy	Discovery of Hafnium .....	570
Curie	Radio-active Substances .....	386
Dalton	Atoms .....	376
Davy	Decomposition of Alkalies .....	390
Davy	Discovery of Sodium & Potassium....	493
Davy	Discovery of Metals in Alkaline Earths	504
Edeberg	Discovery of Yttrium.....	527
Gay Lussac & Thenard	Boron (Decomposition of Boric Acid)..	518
Glauber	Glauber's Salt.....	478

(Turn to next page)

### TEAR OFF COUPON

**PRICES:** 4 copies or less, 25c each; 5 to 10 copies, inclusive, 20c each; more than 10 copies 15c each. Send stamps, money order or check. When the present supply of magazines is exhausted the price will go up to take care of photostating.

Be sure to list both Author and SNL No. for each classic that you desire

Science News Letter  
2101 Constitution Ave.,  
Washington, D. C.

I enclose.....for which please send me the following Science News Letter Classics of Science:

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Use margin of page if necessary)

**CHEMISTRY—Cont.**

Kirchhoff & Bunsen	Discovery of Cesium	493
Klaproth	Discovery of Zirconium	570
Lavoisier	Composition of Air	337
Lavoisier	Discovery of Nitrogen	592
Liebig	Soil Chemistry	360
McGregor	Discovery of Titanium	570
Marignac	Discovery of Ytterbium	535
Mendeleeff	Periodic Table of Elements	380
Mendeleeff	Predicting Undiscovered Elements	551, 552
Moissan	Artificial Diamonds	384
Ostwald	Chemical Energy	577
Paracelsus	Zinc and Quicksilver	512
Priestley	Fixed Air (Carbon Dioxide)	350
Priestley	Discovery of Nitrogen	592
Ramsay	Rare Gases of Atmosphere	486
Scheele	Phlogiston Theory	469
Smithson	Mineral Analysis	428
Strabo	Source of Tin	587
Stromeyer	Discovery of Cadmium	512
Thenard & Gay-Lussac	Boron (Decomposition of Boric Acid)	518
Theoprastus	Mercury	512
Vauquelin	Discovery of Glucinum or Beryllium	503
Wöhler	Synthesis of Urea	340
Wöhler	Discovery of Aluminium	518

**GENETICS**

De Vries	Mutation	358
Galton	Natural Inheritance	443
Lamarck	Inheritance of Acquired Characteristics	419
Mendel	Laws of Heredity	362-363
Morgan	Theory of the Gene	510
Weismann	Chromosomes in Heredity	410

**GENERAL BIOLOGY**

A. Agassiz	Starfish Embryos	348
Audubon	The American Eagle	585
Audubon	Passenger Pigeon	487
Bertillon	Eye Color Description	502
Cuvier	Classification of the Animal Kingdom	345
Dalton	Colorblindness	519
Darwin	"Darwin's Point" and other Rudiments	539
Darwin	Voyage of the Beagle	558
Dubois	Pithecanthropus erectus	475-476
Du Chaillu	"My First Gorilla"	461
Galton	Finger Prints	357
Gesner	Toucan	531
Hooke	The Ant or Pismire	382
Huxley	Hand and Foot	574, 575
Jordan	The Human Harvest	547
Leeuwenhoek	Microbes	497
Loeb	Parthenogenesis	497
Malthus	Population	379
Pasteur	Nutrition of Germs	417
Redi	Spontaneous Generation	398
Schwann	Animal Cell Structure	371
Spallanzani	Regeneration of Earthworms	463
Wallace	Wingless Birds	465

**BOTANY**

Boussingault	Chlorophyll	375
Darwin	Orchids	407
De Candolle	Vine and Fig Tree	523
Fuchs	Corn and Pumpkin (1543)	555
Gerard	Potatoes (1597)	452
Grew	Vegetating Seed	437
Hales	Transpiration in Plants	343
Hooke	Plant Cells	336
Kalm	Kalmia (Mountain Laurel)	492
Linnaeus	Classification of Plants	413-414
Sachs	Plants and the Spectrum	582
Warming	Plant Warfare	457

**MEDICINE**

Banting	Corpulence	377
Beaumont	Gastric Juice	534
Bostock	Hay Fever First Described	579
Budd	Typhoid Fever	545
Gorgas	Yellow Fever	391
Harvey	Circulation of the Blood	346
Holmes	Puerperal Fever	460
Jenner	Vaccination	427
Koch	Discovery of the Tubercle Bacillus	571
Laennec	The Stethoscope	494
Lister	Lister's Antiseptic Treatment	553
Long	Ether as an Anesthetic	472
Morton	Ether as an Anesthetic	472
Nightingale	Nursing	406
Ramazzini	Occupational Diseases in 18th Century	466
Sertürner	Isolation of Morphine	593
Sydenham	Measles in the Year 1670	432
Vesalius	Bone Man and Muscle Man (Plates)	506

**METEOROLOGY**

Espy	How Storms Begin	537
------	------------------	-----

**PSYCHOLOGY**

Beers	Mental Hygiene	451
Cattell	Mental Measurements	440
Hall	Adolescence	513
Pestalozzi	Theories of Education	411

**NUTRITION**

Atwater	Errors in Our Food Economy	568
McCullum	Food Values	515

**GEOGRAPHY**

Andree	Balloon Flight	490
"Challenger" Exped.	Basins of the Atlantic	462

**GEOGRAPHY—Cont.**

Columbus	Discovery of America	366
Humboldt	Cataracts of the Orinoco	464
M'Clintock	Fate of Sir John Franklin's Expedition	480
Marco Polo	Tales of the East	367

**GEOLOGY**

Airy	Isostasy	580
Agassiz	Ice Age	546
Bunsen	Geysers in Iceland	498
Cuvier	The Value of Fossils	597
Dana	Kilauea	426
Darwin	Missing Links Among Fossils	588
Dutton	Earthquakes	554
Geikie	Scenery of Scotland	528
Hoover	Ore Deposits	412
Jefferson	Fossils in Virginia	481
King	Surveying Yosemite Valley	536
Lyell	Mastodons in North America	439
Lyell	Niagara Falls	431
Marsh	Triceratops	520
Merriam	Rancho La Brea	505
Miller	Fossils in Old Red Sandstone	339
Playfair	Huttonian Theory	373
Pratt	Isostasy	580
Sorby	Microscopical Structure of Crystals	563
Zirkel	Rocks of the Fortieth Parallel	596

**ASTRONOMY**

Aristotle	Earth and the Ancients	425
Bradley	Motion of the Fixed Stars	549
Clark	The Dark Companion of Sirius	564
Einstein	Mercury's Orbit	420
Galileo	Mountains of the Moon	341
Galileo	Moons of Jupiter	388
Galileo	Phases of Venus	415
Gould	History and Discovery of Neptune	434
Hale	Earth and Sun as Magnets	516
Hale	Solar Prominences (Spectroheliograph)	484
Hall	Moons of Mars	540
Halley	Halley's Comet	422
Wm. Herschel	Island Universes	381
Wm. Herschel	Discovery of Uranus	429
Huggins	Nebula in Orion	532
Huygens	Saturn's Rings	442
Janssen	Prominences Seen Without Eclipse	590
Kepler	"Law of Regular Solids"	501
Langley	Eclipse of 1878 (Pike's Peak)	594
Laplace	System of the World	474
Leverrier	Mercury's Orbit	420
Lockyer	Prominences Seen Without Eclipse	590
Loomis	History of Discovery of the Asteroids	453
Lowell	Canals on Mars	495
Lowell	Prediction of New Planet (Pluto)	467
Newcomb	Mercury's Orbit	420
Newton	Distance of the Stars	584
Pickering	Photography of Stars	499
Plato	Earth and the Ancients	425
Rittenhouse	Rittenhouse and the Transit of Venus	573
Russell	Belts and Red Spot on Jupiter	409
Schwabe	Periodicity of Sunspots	524
Witt	Discovery of Eros	511

**MATHEMATICS**

Descartes	Co-ordinates	356
Laplace	Theory of Probabilities	448-449

**INVENTION**

Babbage	Difference Engine (Calculating Machine)	495
Bell	Telephone	459
Chardonnet	Artificial Silk	500
Corliss	The Corliss Engine	591
Cottrell	Precipitation of Solid Particles	525
Edison	Electric Lamp	435
Fitch	Which Was the First Steamboat?	576
Franklin	The Franklin Stove	548
Eiffel	Eiffel Tower	488
Goodyear	Vulcanization of Rubber	517
McCormick	Reaper	541
Morse	Telegraph	485
Muybridge	Attitudes of Animals in Moving Pictures	441
Parsons	Steam Turbine	533
Reuleaux	Machine Design	450
Rumsey and Barnes	Which Was the First Steamboat?	576
Sperry	The Gyroscopic Compass	599
Taylor	Lower Costs and Higher Wages (Management)	468
Taylor	Tool Steels	477
Westinghouse	The Air Brake	583
Wright	The First Flight	400

**ANTHROPOLOGY**

Boas	Eskimo	562
Perry & Hawks	Japan Opened to Foreign Commerce	569

**AGRICULTURE**

Washington	George Washington, Experimental Farmer	565
------------	--	-----

**NAVIGATION**

Bowditch	Keeping a Journal at Sea	557
----------	--------------------------	-----

**ARCHAEOLOGY**

Evans	Labyrinth of Minos	489
Layard	Nineveh	529
Lockyer	Stonehenge as an Observatory	309
Mariette	Serapeum (Egypt)	352
Maspero	Homes of Ancient Egypt	556
Montellius	Bronze Age	521
Schliemann	Towers of Ilium (Troy)	454
Squier & Davis	Monuments of the Mississippi Valley	544