

Title Index

A

AAAS academy grants for student research, J. A. Behnke, 834
 AAAS constitution and bylaws, 263
 AAAS council meeting, 1955, D. Wolfe, 268
 AAAS editor, D. Wolfe, 833
 AAAS headquarters, 318
 AAAS membership, 272
 AAAS officers, committees, and representatives for 1956, 271
 AAAS-Rosenthal cancer prize, 20
 AAAS sections call for papers for the New York meeting, 624
 AAAS socio-psychological prize, 538
 AAAS Theobald Smith award, 717
 Ability of *Thais haemostoma* to regenerate its drilling mechanism, W. J. Demoran and G. Gunter, 1126
 Abominable snowman, W. L. Straus, Jr., 1024
 Absence of indoleacetic acid in the apple, L. C. Luckwill and L. E. Powell, Jr., 225
 Absolute chronology of the last glaciation, H. E. Suess, 355
 Absorption and metabolism of iron, C. J. Gubler, 87; erratum, 636
 Abstracting Board of International Council of Scientific Unions, G. A. Boutry, 423
 Accidents in nuclear work, 1111
 Action of *p*-{di(2-chloroethyl)}-amino-L-phenylalanine on Harding-Passey mouse melanoma, J. M. Luck, 984
 Action of some centrally acting drugs on ion transport in red cells, M. E. Greig and A. J. Gibbons, 939
 Activation of bacteriophage by urea, G. H. Sato, 891
 Acute myeloid leukemia following prolonged iodine-131 therapy for metastatic thyroid carcinoma, S. M. Seidlin, E. Siegel, A. A. Yalow, S. Melamed, 800
 Adams, Charles C., ecologist, P. B. Sears, 974
 Adrenal cortex and the parotid secretion of sodium-depleted sheep, J. R. Goding and D. A. Denton, 986
 AEC division of international affairs, 20
 AEC headquarters, 977
 AEC secrecy policy challenged, 451
 African honey-guides, 55
 Age and productivity among scientists, W. Dennis, 724
 Airborne radioactivity, E. Tajima and T. Doke, 211
 Alkaline phosphatase in kidneys of aglomerular fish, J. B. Longley, 142
 Amateur satellite observers, 411
 Amazon fossil search, 1068
 American bacteriologists, E. B. M. Cook, 1137
 Anaphylactic shock in guinea pigs sensitized to polytyrosylgelatin, M. Sela, E. Katchalski, A. L. Olitzki, 1129
 Annual reviews, 259
 Antagonism of 5-hydroxytryptamine by chlorpromazine, E. P. Benditt and D. A. Rowley, 24
 Anthropometric map of Poland, 20
 Antibiotics in agriculture, T. C. Byerly, 30
 Application of paper chromatography to taxonomic studies, A. S. Fox, 143
 Archibald, R. C., and mathematics libraries, C. R. Adams and O. Neugebauer, 622
 Aromatic excretory pattern of schizophrenics, P. L. McGeer, E. G. McGeer, W. C. Gibson, 1029
Artemia salina as a test organism for bioassay, A. S. Michael, C. G. Thompson, M. Abramovitz, 464
 Asian science, H. Grundfest, 289

Assessment of drug effects on emotional behavior, J. V. Brady, 1033
 Assistance for Germany, 1111
 Assistant director for STIP, 258
 Atlanta meeting in retrospect, R. L. Taylor, 273
 Atomic energy notes, 259
 Atomic power plants, 1068
 Attitudes and careers (editorial), G. DuShane, 437
 Australopithecines, W. L. Straus, Jr., 55

B

Bactericidal reaction of mouse serum, L. H. Muschel and T. Muto, 62
 Basis for after-discharge in the median giant axon of the earthworm, C. Y. Kao, 803
 Biochemical action of CDAA, a new herbicide, E. G. Jaworski, 847
 Biological abstracts, 337
 Biological effect of hydroxylysine, C. S. Petersen and R. W. Carroll, 546
 Biological effects of atomic radiations, 1110
 Biological origin of native sulfur in salt domes of Texas and Louisiana, G. E. Jones, R. L. Starkey, H. W. Feely, J. L. Kulp, 1124
 Biological response curves, W. W. Westfeld, 1017
 Biology of inflammation, V. Menkin, 527
 Black pigment concentrating factor in the fiddler crab, M. Fingerman, 585
 Blood groups in physical anthropology, B. Glass, 927
 Body composition and energetics in obesity induced in mice by adrenotropic tumors, J. Mayer, C. Zomzely, J. Furth, 184
 Bonding in the molecular addition complexes of the alkyl phosphates and thiophosphates, W. W. Wendlandt and J. M. Bryant, 1121
 Brain fuel and function, R. W. Gerard and A. Geiger, 673
 Bryan, W. L., scientist, philosopher, educator, J. R. Kantor, 214
Bulletin of the Atomic Scientists, 217

C

Calculating the loudness of noise, S. S. Stevens, 676
 Can we halt the race for atomic arms? C. P. Anderson, 921
 Carbon dioxide sorption by yeast, J. Amsz, Jr., R. F. Dale, H. J. Peppler, 463
 Catheptic activity in tissues of tumor-bearing rats, A. L. Babson, 1082
 CERN progress in 1955, 216
 Certain fundamental events in the menstrual cycle, G. W. Bartelmez, 672
 Charles, D. R., geneticist and statistician, K. W. Cooper, 787
 Chemical conversion of solar energy, R. J. Marcus, 399
 Chemical model of drug action, A. Gero and V. J. Reese, 100
 Chenodeoxycholic acid in human blood serum, J. B. Carey, Jr., 892
 Chinese Walls of New Cave, Carlsbad Caverns National Park, D. M. Black, 937
 Chlorosis produced by fluorine on citrus in Florida, I. W. Wander and J. J. McBride, Jr., 933
 Cholinesterase activity of human leukocytes, G. H. Denny, Jr., and D. D. Hagerman, 987
 Citation indexes for science, U. H. Schoenbach, 61; E. Garfield, 62
 Civil Service science salaries, 976
 Clinical experiment on the use of sodium N-lauroyl sarcosinate in the control of dental caries, L. S. Fosdick, 988

Clot-retraction promoting factor (retractin) in platelets and tissues, S. I. Magalini and M. Stefanini, 796
 Cocarcinogens and minimal carcinogenic doses, W. E. Poel, 588
 Code for atomic structure of solids, 790
 Collection of atomic bomb debris from the atmosphere by impactation on screens, I. H. Blifford, Jr., L. B. Lockhart, Jr., R. A. Baus, 1120
 College and university teachers (editorial), G. DuShane, 85
 Color autoradiography, G. W. Buckaloo and D. V. Cohn, 333
 Comments on "Science and the supernatural," J. B. Rhine, 11
 Committee on mathematical biology, W. S. McCulloch, R. Carnap, E. Brunswik, G. H. Bishop, R. Meyers, G. von Bonin, K. Menger, A. Szent-Gyorgyi, 725
 Compatibility of science and ESP, P. E. Meehl and M. Scriven, 14
 Conduction block in peripheral nerve produced by oxygen at high pressure, P. L. Perot, Jr., and S. N. Stein, 802
 Congenital galactosemia, a single enzymatic block in galactose metabolism, K. J. Isselbacher, E. P. Anderson, K. Kurahashi, H. M. Kalckar, 635
 Convenient method for recognizing non-opaque cerium earth minerals, K. J. Murata and H. Bastron, 888
 Conversion of lactate into glycogen in skeletal muscle of hepatectomized rats, P. Cheosakul, L. W. Blide, M. Vanko, A. Knudson, 375
 Copper fluorides, H. M. Haendler, 459
 Cork virus leafspots on triumph sweet-potato contain separated parenchyma cells, E. M. Hildebrand, 1034
 Correlation of major vegetation climaxes with soil characteristics in the Sonoran Desert, T. W. Yang and C. H. Lowe, Jr., 542
 Cosmic ray activity, 452
 Cosmic-ray colloquium, J. R. Winckler, 997
 Cosmic spherules in deep-sea sediments, 450
 Courses for science and mathematics teachers, I. E. Wallen and J. R. Mayor, 1166
 Creation of rare minerals, 20
 Credit in education? (editorial), J. R. Mayor, 919
 Crosslinking of latex rubber, E. M. Bevilacqua, 1123
 Crystal structure of turnip yellows virus protein, L. W. Labaw and R. W. G. Wycoff, 849
 Current status of theories of hearing, G. v. Békésy, 779
 Cytogenetics of sex in *Gibberella cyanogena* (DESM.) SACC., A. S. El-Ani, 850

D

Dangerous dagger, C. F. Richter, 723
 de Chardin, Pierre Teilhard, paleoanthropologist, H. L. Movius, Jr., 92
 Decimals for India, 217
 Demonstration of particulate adhesion of the Rieckenberg type with the spirochete of syphilis, C. Lamanna and D. H. Hollander, 989
 Detection of complement-fixing antibodies for Carré's virus, J. E. Prier, B. S. Wright, S. S. Kalter, 586
 Detection of sex of fetuses by the incidence of sex chromatin body in nuclei of cells in amniotic fluid, E. L. Makowski, K. A. Prem, I. H. Kaiser, 542
 Detection of staphylococcus enterotoxin by infrared spectrophotometry, L. Levi, B. H. Matheson, F. S. Thatcher, 64

- Determination of phosphocreatine and other phosphorylated intermediates with Dowex-1 resin, L. G. Aboud, 545
- Developmental biology and cytodifferentiation, 1184
- Dielectric relaxation times and shapes of rigid molecules, C. P. Smyth, 675
- Directional differences in pigeon homing, G. Kramer, J. G. Pratt, U. von St. Paul, 329
- Disease in the giant African snail *Achatina fulica* Bowdich, A. R. Mead, 1130
- Dissociation of cultures from *Picea glauca* into small tissue fragments and single cells, J. Reinert, 457
- Distribution of alpha-radioactivity in certain forest types, J. T. Curtis and R. Dix, 799
- Dosage schedule for Salk vaccine, 624
- Dunn, E. R., herpetologist, R. Conant, 975
- Duodenal ulcer and the hypothalamus-pituitary-adrenal stress mechanism, L. R. Dragstedt, H. Ragins, L. R. Dragstedt II, S. O. Evans, 673
- Duttonite, new vanadium mineral from Peanut Mine, Montrose County, Colorado, M. E. Thompson, C. H. Roach, R. Meyrowitz, 990
- E**
- Early man and fossil bison, R. G. Forbis, 327
- Ecosystem as the basic unit in ecology, F. C. Evans, 1127
- Edgar, Graham, chemist of parts, H. A. Beatty, 365
- Edge waves on the continental shelf, W. Munk, F. Snodgrass, G. Carrier, 127
- The educated man in 1984, J. Brownowski, 710
- Effect of barbiturates on acetylation, B. H. Marks, 332
- Effect of cortisone on 17-ketosteroid excretion in patients with diabetes mellitus, J. L. Izzo and A. Eilers, 417
- Effect of DDD and some of its derivatives on plasma 17-OH-corticosteroids in the dog, F. A. Cobey, I. Taliaferro, H. B. Haag, 140
- Effect on endosperm phenotype in maize of heterozygosity at the *R* locus in the staminate parent, R. A. Brink, 672
- Effect of ergot drugs on *Betta splendens*, L. T. Evans, L. H. Geronimus, C. Kornetsky, H. A. Abramson, 26
- Effect of foliar sprays of maleic hydrazide on photosynthesis, J. J. Callaghan and R. W. Van Norman, 894
- Effect of gibberellin on elongation, water uptake, and respiration of pea-stem sections, J. Kato, 1132
- Effect of growth hormone and acromegaly on plasma phospholipid, E. A. McCulloch, A. Britton, C. J. Bardawill, K. J. R. Wightman, 1084
- Effects of intravenously administered fat on the serum lipoproteins, F. S. M. Herbst, W. F. Lever, W. R. Waddell, 843
- Effect on *Meloidogyne hapla* of excised tomato roots treated with alpha-methoxyphenylacetic acid, W. Wieser, 374
- Effects of pentobarbital sodium on adaptive behavior patterns in the rat, M. R. Rosenzweig, D. Krech, E. L. Bennett, 371
- Effect of polarized light on polarity of *Fucus*, L. Jaffe, 1081
- Effect of reserpine on adrenocortical function in unanesthetized dogs, R. H. Eg-dahl, J. B. Richards, D. M. Hume, 418
- Effect of reserpine on learning and performance, L. Weiskrantz and W. A. Wilson, Jr., 1116
- Effect of sensory deprivation on learning rate in human beings, J. Vernon and J. Hoffman, 1074
- Effect of temperature on the long-wave limit of photosynthesis, R. Emerson, R. Chalmers, C. Cederstrand, M. Brody, 673
- Efficacy of striatal shocks in avian conditioned behaviors, A. L. Towe, 936
- Egloff, Gustav, petroleum scientist, S. S. Kurtz, Jr., 832
- Einstein, Albert (biography), P. G. Bergmann, 486
- Elastase production in the canine pancreas, A. E. Carter, 669
- Electroluminescence in disordered zinc sulfide, 451
- Electrophoretic separation of hemoglobins from the chicken, V. L. Johnson and J. S. Dunlap, erratum, 229
- Electrophysiological correlates of a conditioned response in cats, R. Galambos, G. Sheatz, V. G. Vernier, 376
- Emphasis on mathematics (editorial), D. Wolfe, 965
- Endocrine influences on growth of a benign transplantable mammary tumor, C. Huggins, Y. Torralba, A. Charr, 674
- English style in scientific papers, J. R. Baker, 713
- Enhancement of the central nervous system effects of strychnine and pentobarbital by diphenhydramine, J. F. Sherman, 1170
- Enhancement of oxidative phosphorylation of glucose by insulin, G. Bhattacharya, 505
- Enzymatic detoxification mechanism for Viadril, W. B. Jakoby and G. Tompkins, 940
- Enzymatic synthesis of cholesteryl coA and taurocholic acid, M. D. Siperstein and A. W. Murray, 377
- Enzymes as biological units, E. Adams, 149
- Eohelaea stridulans*, a striking example of paramorphism in a Baltic amber gnat, A. Petrunkevitch, 675
- Ethylene oxide for sterilizing diets, J. S. Barlow and H. L. House, 229
- Evaluation of four activity techniques for monkeys, W. Isaac and T. C. Ruch, 1170
- Evaporograph, 410
- Evidence for the incorporation of iron and calcium into the pigments of *Serratia marcescens*, R. P. Williams, J. A. Green, D. A. Rappoport, 1176
- Evidence for a negative-feedback mechanism in the biosynthesis of isoleucine, H. E. Umbarger, 848
- Evis water conditioner, G. DuShane, 1107
- Expanding universe, 133
- Experiment should fit the hypothesis, the, J. B. Rhine, 19
- Experimental monocytic leukemia, F. Pentimalli, 458
- Explanation for the so-called "ascending impulses" in the pyramidal tract, W. M. Landau, 895
- Exposure duration as a variable in perceptual constancy, H. Leibowitz, P. Chineti, J. Smowski, 668
- Extrasensory perception (editorial), D. Wolfe, 7
- F**
- Factors in human milk interfering with influenza-virus activities, R. K. Silver, G. Braun, F. Zilliken, G. H. Werner, P. György, 932
- Fallout dosages at Washington, D.C., I. H. Blifford, Jr., and H. B. Rosenstock, 619
- Farther experiments and observations in electricity, B. Franklin, 47
- Fate of kidney-tissue homografts after simultaneous transplantation with parabiosis of albino rats, B. B. Kamrin, 1179
- Fate of radiostrontium fed to *Habrobracon* females, D. S. Grosch and L. E. LaChance, 141
- Fifty years of relativity, P. G. Bergmann, 487
- Finding of silver positive reticulum in early human tubercles, A. Nettleship and M. Nettleship, 505
- Fine structure of the hydrogen atom, W. E. Lamb, Jr., 439
- Flint Ridge cave system, 20
- Fluorescent thorium mineral, W. L. Minto, 419
- Ford committee, 1112
- Foreign travel (editorial), D. Wolfe, 125
- Foreign visitors' seminars (editorial), M. H. Trytten, 485
- Formation constants for Cu(II)-peat complexes, N. T. Coleman, A. C. McClung, D. P. Moore, 330
- Formation of radioactive protein-bound moniodotyrosine by stored thyroid slices, S. W. Mayer, F. H. Kelly, M. E. Morton, 26
- Fractionation of acrasin, a specific chemotactic agent for slime mold aggregation, M. Sussman, F. Lee, N. S. Kerr, 1171
- Fractionation of oxygen isotopes during respiration, G. A. Lane and M. Dole, 574
- Fresh-water sawfishes and sharks in Netherlands New Guinea, M. Boeseman, 222
- G**
- Gallium: thermal conductivity; supercooling; negative pressure, L. J. Briggs, 672
- Gases in icebergs, P. F. Scholander, J. W. Kanwisher, D. C. Nutt, 104
- G.E. gas turbine division, 366
- General principles of cooperation on biological abstracting, 578
- Genetic effects of atomic radiation, Committee on Genetic Effects of Atomic Radiation, National Academy of Sciences, 1157
- Genetics of Japan, past and present, T. Komai, 823
- Geneva nuclear exhibit, 451
- Genus *Haemagogus* in the United States, H. Trapido and P. Galindo, 634
- German atomic energy center, 94
- Gibberellic acid, B. Glass, 1067
- Glacier campsite, 1067
- Gold in useless knowledge, the (editorial), W. M. Stanley, 353
- Gordon research conferences, W. G. Parks, 91
- Grantee ethics (editorial), D. Wolfe, 1015
- Grasshoppers on the rangelands, 179
- Great Bahama bank, 1025
- Green crabs and the redistribution of quahogs, J. M. Moulton and A. H. Gustafson, 992
- Grouping in spatial distributions, P. J. Clark, 373
- Gum replica technique for electron or light microscopy, G. E. Hess and E. J. Schantz, 983
- H**
- Heart disease mortality in women, 977
- Heat conductivity in polyatomic gases, J. O. Hirschfelder, 674
- Hemoglobin J, O. A. Thorup, H. A. Itano, M. Wheby, B. S. Leavell, 889
- Hemoglobin-reactive substance in human serum, R. J. Wieme; A. H. Tuttle, 461
- High-incidence blood group found in Venezuelan Indians, M. Layrisse and T. Arends, 633
- High-resolution microradiography, W. A. Ladd, W. M. Hess, M. W. Ladd, 370

- High-school students as laboratory assistants, A. B. Pardee, 725
 Histocompatibility genes, G. D. Snell, 675
 Histological changes induced in soybean roots by 2,4-dichlorophenoxyacetic acid, C. N. Sun, 1129
 Hulett, G. A., great experimetalist, C. P. Smyth, 93
 Human arterial hypertension: a state of mild chronic hyperaldosteronism? J. Genest, G. Lemieux, A. Davignon, E. Koiw, W. Nowaczynski, P. Stevermark, 503
 Humanities for engineers, 833
 Hydrogen emissions from distant galaxies, 880
 Hydrogenase in biological nitrogen-fixing agents, P. W. Wilson, 676
 Hypoglycemic action of sulfonylureas in patients with diabetes mellitus, I. A. Mirsky, D. Dienott, H. Dolger, 583
 Hypothermia by internal cooling, H. B. Benjamin, M. Wagner, H. K. Ihrig, W. Zeit, 1128
- I**
- Idaho reactor damaged, 718
 IGY whistler observations, R. A. Helliwell and M. G. Morgan, 788
 Immigration laws and the foreign visitor (editorial), J. E. Burchard, 615
 Impure biochemical products, H. E. Carter, J. T. Edsall, S. Weinhouse, H. Neurath, O. Schales, C. V. Smythe, 54
 Increased frequency of births in the morning hours, P. D. King, 985
 Increased oxidative effects on irradiation in glass, E. C. Bubl, 1178
 Increased production of carotene by mixed + and - cultures of *Choanephora cucurbitarum*, H. L. Barnett, V. G. Lilly, R. F. Krause, 141
 Induced spawning in the Indian catfish, L. S. Ramaswami and B. I. Sundararaj, 1080
 Induction of normal structures in embryos and of tumors in larvae of amphibians, J. Holtfreter, 674
 Infectivity of tularemia applied to intact skin and ingested in drinking water, S. F. Quan, A. G. McManus, H. von Fintel, 942
 Influence of the concentration of leukemic inoculum on the effectiveness of treatment, A. Goldin, J. M. Venditti, S. R. Humphreys, N. Mantel, 840
 Influence of fluid motions on the free decay of a magnetic field, S. Chandrasekhar, 672
 Influence of white blood cells on lysis of red cells by cobra venom, J. C. Turner, 631
 Inherent inconsistencies in fluorescence and scintillation spectra, D. G. Ott, F. N. Hayes, V. N. Kerr, R. W. Benz, 1071
 Inhibition of aerobic phosphorylation and Pasteur reaction by an adrenal-cortical extract, Z. Miller, 797
 Inhibition of audiogenic seizures by carbon dioxide, W. G. Mitchell and R. C. Grubbs, 223
 Inhibition of the effect of some carcinogens by their partially hydrogenated derivatives, P. Kotin, H. L. Falk, W. Lijinsky, L. Zechmeister, 102; erratum, 378
 Inhibition of enzymatic browning of chlorogenic acid solutions with cysteine and glutathione, R. E. Henze, 1174
 Insulin-sparing sulfonamides, L. W. Kinsell, F. R. Brown, Jr., R. W. Friskey, G. D. Michaels, 585
 Interaction of molybdenum and iron in soils, L. H. P. Jones, 1116
 Interaction product of glycine and dextrose toxic to *Phytophthora fragariae*, W. E. McKeen, 509
 Interference in Salkowski assay of indoleacetic acid, R. S. Platt, Jr., and K. V. Thimann, 105
 International atomic energy agency, 788
 International comparisons of radioactivity standards, A. V. Astin, E. C. Bullard, W. B. Lewis, 895
 International cooperation in arid zone research, G. F. White, 537
 International cooperation in radiobiology through an agency sponsored by the United Nations, Z. M. Bacq, 845
 International Geophysical Year symbol, H. Odishaw, 722
 Intracellular recording from moving tissues with a flexibly mounted ultramicro-electrode, J. W. Woodbury and A. J. Brady, 100
 Intraspacific differences in rabbit serum proteins, M. H. Adams, 1166
 Intravenous bufotenine injection in the human being, H. D. Fabing and J. R. Hawkins, 886
 Invertebrate endocrinology, L. Arvy, M. Gabe, B. Scharrer, 382
In vitro studies on the action of sulfonamide hypoglycemic agents, M. Vaughan, 885
 Iroquois research, W. N. Fenton, 69
 Ivory-nut palm from late Tertiary of Ecuador, R. W. Brown, 1131
- J**
- Junior academies of science, T. Heatwole, 976
- L**
- Lack of recognition of foreign works, R. C. Mitchell, 990
 Lactose in the Sapotaceae, F. J. Reithel and R. Venkataraman, 1083
 Latent learning in earthworms, R. P. Bharucha-Reid, 222
 Leap year and calendar reform, G. W. Walker, 25
 Legendary Thai tribe, 880
 Lengthening the carbon chain of sugars, A. Rosenthal, D. Read, C. Cameron, 1177
 Library searches with punched-card machines, W. F. Brown, Jr., and G. Oneal, Jr., 722
 Lipid levels in migrating birds, E. P. Odum and C. E. Connell, 892
 Loss of nutrients from plant foliage by leaching as indicated by radioisotopes, W. G. Long, D. V. Sweet, H. B. Tukey, 1039
 Loss of sebaceous glands in skin of thiamine-deficient mice, T. S. Aroyris, 634
 Low-temperature physics, J. G. Daunt, 190
 Lowered P/O ratios with mitochondria isolated from livers showing cloudy swelling, A. Fonnesu and C. Severi, 324
 Loyalty and research, Report of the Committee on Loyalty in Relation to Government Support of Unclassified Research, 660
- M**
- Macelwane, James B., seismologist and teacher, P. Byerly, 1109
 Magnetic measurements and biological substances, 499
 Magnetic moment of the electron, P. Kusch, 207
 Magnetic techniques for *in vitro* isolation of leucocytes, S. Levine, 185; erratum, 323
 Mammary carcinomas in mice, G. DuShane, 539
 Man and machines (editorial), L. Carmichael, 821
 Manpower statistics (editorial), D. Wolfe, 45
 Marginal homozygosity for gene arrangement in *Drosophila robusta*, H. L. Carson, 630
 Marine borers and related problems, 514
 Marine fishes in fresh water, A. W. C. T. Herre; M. Boeseman, 1035
 Marriot, R. W., astronomer, P. van de Kamp, 536
 Mean rate of change and a graphic method for its evaluation, S. I. Askovitz, 507
 Measurement of radioactive ages of rocks, L. T. Aldrich, 871
 Mechanism of growth control in liver regeneration, A. D. Glinos, 673
 \$2,657,434 for medical schools, 318
 Merit scholarships, 499
 Merrill, Elmer Drew, administrator and botanist, R. C. Rollins, 831
 Metabolite of phenobarbital in human urine, E. J. Algeri and A. J. McBay, 183
 Metal whiskers, K. Lark-Horovitz, 1165
 Metamorphosis, M. Rockstein, 534
 Metcalf, Zeno Payne, distinguished entomologist, C. F. Smith, 1022
 Meteorological buoy, 717
 Meteorology and atomic energy, 976
 Method for distinguishing intact cells from free nuclei, R. Barer, S. Joseph, M. P. Esnouf, 24
 2-Methyl hydrocortisones: a new series of steroids with enhanced potency and prolonged action, G. W. Liddle and J. E. Richard, 324
 Microbiological assay of vitamin B₁₂ in marine solids, P. R. Burkholder and L. M. Burkholder, 1071
 Microfoundations, E. G. Toomey, 507
 Miner, Roy W., naturalist and marine biologist, H. W. Stunkard, 879
 Modern structural chemistry, L. Pauling, 255
 Modification of electric activity in cochlear nucleus during "attention" in unanesthetized cats, R. Hernández-Peón, H. Scherrer, M. Jouvert, 331
 Molecular bases of parasitism of some bacterial viruses, S. S. Cohen, 653
 Molecular engineering, A. von Hippel, 315
 Moore, C. R., zoologist and contributor to medicine, L. R. Dragstedt, 496
 Mumps and Newcastle virus reproduction, F. L. Horsfall, Jr., 674
 Mutation, A. M. Srb, 233
 Myo-inositol as an essential growth factor for normal and malignant human cells in tissue culture, H. Eagle, V. I. Oyama, M. Levy, A. Freeman, 845
- N**
- National academy elections, 833
 National Institute of Allergy and Infectious Diseases, 258
 National medical library, a (editorial), G. DuShane, 869
 Natural selection associated with the ABO blood group, J. A. Buckwalter, E. B. Wohlwend, D. C. Colter, R. T. Tidrick, 840
 Nature of protein synthesis in sweetpotato infected with *Ceratostomella fimbriata*, T. Akazawa, 1075
 NBS jerkmeter, 20
 Need for patent examiners, H. E. Sharpe, 577
 New AAAS associate society, L. D. Hertert, 178
 New affiliate of AAAS, P. H. Robbins, 134
 New associate society of AAAS, G. W. Patterson, 881
 New calorimeter, 881
 New Canadian clinics, 977

- New color test for thiols and thioesters, R. Benesch, R. E. Benesch, M. Gutcho, L. Laufer, 981
- New directions in research support (editorial), G. DuShane, 525
- New evidence for reversal of the geomagnetic field near the Pliocene-Pleistocene boundary, N. D. Opdyke and S. K. Runcorn, 1126
- New fossil plants, 1025
- New insoluble active derivative of an enzyme as a model for study of cellular metabolism, M. A. Mitz, 1076
- New look in Soviet genetics, G. L. Stebbins, 721
- New marine biological laboratory in Brazil, P. Sawaya, 538
- New Medical center at Brookhaven National Laboratory, 95
- New method for mass determinations on microscopic particles, J. Meyer-Arendt, 1176
- New oral insulinlike agent, E. M. Lerner, 258
- New scheme for performance of osmotic work by membranes, C. A. Thomas, Jr., 60
- New synthesis of oxalic acid, T. Hasselstrom and M. C. Henry, 1038
- New synthetic hormone, 94
- New TB vaccine, 411
- New theory of interference in clotting mechanism by abnormal plasma proteins, H. H. Henstell and M. Feinstein, 1118
- Nitrogen secretion in the swimbladder of whitefish, P. F. Scholander, L. van Dam, T. Enns, 59
- Nonspecificity of ATP-contraction of living muscle, G. Falk, 632
- North Pacific survey, 55
- Note on absolute chronology of human evolution, C. Emiliani, 924
- Note on Murphy's and Rhine's comments, K. Smith and H. J. Canon, 418
- Notions on sensitivity of cells to radiation, O. A. Schjeide, J. F. Mead, L. S. Myers, Jr., 1020
- NSF appropriations, 451
- NSF institutes for science and mathematics teachers, H. C. Kelly, 177
- NSF survey of industrial research, 133
- Nuclear engineering and science congress, P. N. Powers, 595
- Nuclear tests, 716
- Nuclei counts on rat liver homogenates, A. D. Bass, A. H. McArdle, J. W. Grisham, 372
- O**
- Observations at an ancient smelting site in Negev, V. P. Soroloff and A. Seroussi, 587
- Observations on the cortical mechanism of EEG activation accompanying behavioral arousal, D. P. Purpura, 804
- Occurrence of D-glyceric acid in tobacco leaves, J. K. Palmer, 415
- Occurrence of 2-hexenal in the cockroach *Eurycotis floridana*, L. M. Roth, W. D. Niegisch, W. H. Stahl, 670
- Occurrence of three red blood cell antigens in rabbit as the result of interaction of two genes, C. Cohen, 935
- Of books and reading (editorial), G. DuShane, 703
- On paleotemperatures of Pacific bottom waters, C. Emiliani, 460
- On the collateral lives of physicists (editorial), R. Oppenheimer, 397
- On the intimate composition of membranes of the inner ear, L. F. Bélanger, 1074
- On the origin of cancer cells, O. Warburg, 309
- On the rule for leap year, C. C. Wylie, 544; erratum, 850
- On "Science and the supernatural," S. G. Soal, 9
- Oral phosphate levels and caries activity, W. J. Carter, K. C. Hoerman, H. R. Englander, I. L. Shklair, 325
- Origin of the magneto-ionic expander isotope separator, J. Slepian, 675
- Origin of the tetrapod limb, G. Gunter, 495
- Orinase, a new oral hypoglycemic compound, W. L. Miller, Jr., and W. E. Dulin, 584
- Osburn, R. C., connoisseur of living, F. L. Campbell, 576
- Other things are never equal (editorial), J. Turner, 1099
- P**
- Paget, R., and human speech, J. W. Black, 215
- Paleotemperatures of Pacific bottom waters and multiple hypotheses, O. L. Bandy, 459
- Palynological study of Pleistocene deposits on Banks Island, Northwest Territories, Canada, J. Terasmae, 801
- Paradamite, a new zinc arsenate from Mexico, G. Switzer, 1039
- Pathogenesis of poliomyelitis, A. B. Sabin, 1151
- Peat as a binder, 1025
- Peters, John Punnett, medical scientist, J. F. Fulton, 1023
- Phospholipid symposium, J. F. Berry, 468
- Photochemical reactions of nitrogen dioxide and hydrocarbons in air, A. Miller, C. Brown, K. D. Francon, 934
- Photosynthetic luminescence and photoinduced absorption spectrum changes in *Chlorella*, B. L. Strehler and V. H. Lynch, 462
- Phototropism of the *Avena* seedling in the ultraviolet, K. V. Thimann and G. M. Curry, 676
- Physicists visit the Soviet Union, 834
- Physiologists report recent work, S. Rodbard, 1045
- Pithecanthropus* in Africa? W. L. Straus, Jr., 498
- Pituitary growth hormone as a metabolic hormone, C. H. Li, 617
- Placzek, George, theoretical physicist, V. F. Weisskopf, 409
- Plans for atomic power, 625
- Pluto not a planet? W. J. Luyten, 896
- Pollen from Leda clay of Maine, A. S. Knox, 1118
- Possible function of serum proteins in tissue culture, L. S. Vann, 326
- Postirradiation protection of rabbits by injection of "splenic" plasma, B. R. Allen, H. G. Wardell, M. Clay, 1080
- Precipitation of enzymes during isolation of chloroplasts in Carbowax, C. R. Stocking, 1032
- Preliminary announcement of the seventh New York meeting, R. L. Taylor, 947
- Preliminary report on biological applications of color television, M. C. Brown, 589
- Prenatal diagnosis of sex using cells from the amniotic fluid, L. Sachs, D. M. Serr, M. Danon, 548
- Probability, logic, and ESP, P. W. Bridgman, 15
- Program of the Gordon research conferences, W. G. Parks, 357
- Pronuclear fusion as affected by x-rays and by postirradiation anaerobiosis, C. S. Bachofer, 139; erratum, 323
- Properties of acrasin, B. M. Shaffer, 1172
- Protection against *Clostridium perfringens* type A toxin by a metal-chelating compound, M. Moskowitz, M. W. Deverell, R. McKinney, 1077
- Protection of mouse fetus against x-irradiation death, R. Rugh and H. Clugston, 28
- Protein symposium, T. E. King, 854
- Pseudotuberculosis in experimental animals, I. L. Shechmeister, 463
- Psychosemanticist will see you now, Mr. Thurber, the, J. Thurber, 705
- Purification and crystallization of Coxsackie virus, C. F. T. Mattern and H. G. duBuy, 1037
- Pygmies in New Guinea, 977
- Pyridine nucleotide analogs and the sulfhydryl nature of some FAD enzymes, M. O. Weber and N. O. Kaplan, 844
- Q**
- Quantitative infrared spectroscopy of desoxyribonucleic acid in the fractional milligram range, H. P. Schwarz, R. Childs, L. Dreisbach, S. V. Mastrangelo, 328
- Quantitative microinjection of mosquitoes, J. Chao and G. H. Ball, 228
- Quantitative underwater study of benthic communities inhabiting kelp beds off California, A. A. Aleem, 183
- R**
- Radiation in emission nebula, 318
- Radiation-induced fecal fat formation in the rat, M. G. Morehouse and R. L. Searcy, 1032
- Radioactive fallout and radioactive strontium, W. F. Libby, 657
- Radioactive pharmaceuticals, 20
- Radioactivity in thyroid glands following nuclear weapons tests, L. Van Middlesworth, 982
- Radioisotope distribution, 178
- Radiometry of Mars and Venus, J. Strong and W. M. Sinton, 676
- Radiosensitivity factors in oat seeds: dormancy, water, and development, S. S. Ivanoff, 1125
- Radio waves from Jupiter, 452
- Rate of postglacial rise of sea level, F. P. Shepard and H. E. Suess, 1082
- Reabsorption of cobalt-60 from urine and bile samples of experimental dogs, C-C. Lee and L. F. Wolterink, 65
- Reading science writing, 95
- Reagent for differentiation of 1,4- and 1,6-linked glucosaccharides, S. Schwimmer and A. Bevenue, 543
- Recent archeological finds, 1111
- Recombination in bacteria, C. C. Lindgren, 897
- Recording animal sounds, H. Frings and M. Frings, 1088
- Relation of aromatic amino acids to excretory pattern of schizophrenics, P. L. McGeer, E. G. McGeer, J. E. Boulding, 1078
- Reports of sections and societies, Atlanta meeting, 279
- Research associateship program, 94
- Research support by private foundations, 217
- Resistance to organic phosphorus insecticides of the housefly, J. Keiding, 1173
- Restricted random walk in transport, H. Eyring, T. Ree, T. Einwohner, 673
- Reversible bleaching of chlorophyll *in vivo*, J. W. Coleman, A. S. Holt, E. Rabinowitch, 795
- Rockefeller Institute graduate program, 216
- Rodenticidal effect on pine mice of endrin used as a ground spray, F. Horsfall, Jr., 61
- Role of council for international organizations in medical sciences, M. B. Vischer, 337

Role of diet in egg development by mosquitoes (*Aedes aegypti*), A. O. Lea, J. B. Dimond, D. M. DeLong, 890
 Role of structural defects on some properties of semiconductors, F. D. Rosi, 675
 Role of teachers in scholarship programs, H. J. Bennett, A. R. Colmer, V. E. Parker, A. E. Sandberg, H. E. Wheeler, H. B. Williams, R. V. Nauman, 942

S

Salivary amylase in the rat, R. L. McGeachin and J. R. Gleason, 841
 Salk vaccine in Massachusetts, 178
 Saltonstall-Kennedy report, 133
 Schweitzer, Albert, 216
 Science and international relations, 1067
 Science and loyalty (editorial), D. Wolfle, 651
 Science and the open channel (editorial), R. P. Feynman, 307
 Science in the *Saturday Review* (editorial), G. DuShane, 565
 Scientist's perspective, the (editorial), B. Glass, 777
 Scopoletin in differentiating and nondifferentiating cultured tobacco tissue, K. Tryon, 590
 Scott, W. D., pioneer in applied psychology, R. C. Clothier, 408
 Sea-water conversion, 218
 Sea-water distillation, 789
 Search for cancer drugs, 790
 Secondary-school enrollment, I. E. Wallen and J. R. Mayor, 880
 Secrecy and scientific progress, L. V. Berkner, 783
 Security program, The, 1165
 Sequences of metabolic events during growth of synchronized bacteria, D. B. McN. Scott, E. D. DeLamater, E. J. Minsavage, E. C. Chu, 1036
 Serotonin and bleeding, 834
 Serotonin-releasing activity limited to *Rauwolfia* alkaloids with tranquilizing action, B. A. Brodie, P. A. Shore, A. Pletscher, 992
 Serum cholesterol in men in basal and nonbasal states, A. Keys, J. T. Anderson, O. Mickelsen, 29
 Serum components in the newborn, E. Sohar, E. T. Bossak, C.-I. Wang, D. Adlersberg, 461
 Serum lactic dehydrogenase activity in acute transmural myocardial infarction, F. Wróblewski, P. Rueggsegger, J. S. LaDue, 1122
 Serum protein concentrations in the North American Negro, H. M. Rawnsley, V. L. Yonan, J. G. Reinhold, 991
 Shell mineralogy in Paleozoic invertebrates, F. G. Stehli, 1031
 Signals from Venus, 1111
 Significance of "heat-activated" enzymes, M. N. Swartz, N. O. Kaplan, M. E. Frech, 50
 Simple procedure for identification and rapid counting of mast cells in tissue sections, E. W. Smith and W. B. Atkinson, 941
 Simplotite, new calcium tetravanadate from the Colorado Plateau, M. E. Thompson, C. H. Roach, R. Meyrowitz, 1078
 Size of the antiproton, 318
 Small industries training program, 624
 Small polyribonucleotides with 5'-phosphomonoester end-groups, L. A. Hepfel, P. J. Ortiz, S. Ochoa, 415
 Smoking, air pollution, and lung cancer, E. M. Lerner, 450
 L. H. Snyder, president elect, C. P. Oliver, 266
 Socio-psychological prize judges, 976
 Soil as natural reservoir for human pathogenic fungi, L. Ajello, 876

Solutions for the propagation of waves through a lattice of spherical scatterers, P. M. Morse, 674
 Some comments on "Temperature profiles throughout cigarettes, cigars, and pipes," E. S. Harlow, 226; C. R. Greene, 227
 Some potassium-argon ages for western Canada, H. A. Shillibeer and R. A. Burwash, 938
 Southern Hemisphere observatory, J. B. Irwin, 577
 Southwestern and Rocky Mountain division of the AAAS, D. Wolfle, 1184
 Soviet nuclear explosion, 833
 Soviet visitors, 134
 Spectrophotometric studies of oxidative phosphorylation, M. E. Pullman and E. Racker, 1105
 Spiral male nuclei in ragweed pollen, A. Yuasa, 633
 Spirit of science, the (editorial), G. DuShane, 165
 Standards of time and frequency, G. M. Clemence, 567
 State conservation programs, 790
 State Department's opportunity in science, the (editorial), D. Wolfle, 205; erratum, 253
 Stepwise reaction via intermediates on separate catalytic centers, P. B. Weisz, 887
 STIP study on the use of science counselors, J. R. Mayor, 624
 Structure of influenza virus, F. M. Burnet, 1101
 Studies on 4APP: antineoplastic action *in vitro*, T. C. Hsu, R. K. Robins, C. C. Cheng, 848
 Studies of chlorotetracycline biosynthesis and the preparation of chlorotetracycline- C^{14} , P. A. Miller, J. R. D. McCormick, A. P. Doerschuk, 1030
 Studies on tryptophan and serotonin in patients with malignant carcinoid, S. Udenfriend, H. Weissbach, A. Sjoerdma, 669
 Study center for behavioral scientists, R. W. Tyler, 405
 Subject indexing in a restricted field, I. D. Welt, 723
 Suggestions for contributors to *Science*, 714
 Summer jobs for high-school students, J. G. Busse, 185
 Super permanent magnet material, 1165
 Suppression and modification of virus-induced Rous sarcoma in chicks by xeroin, V. Groupé, F. J. Rauscher, W. R. Bryan, 1073
 Suprasternal ossicles, W. L. Straus, Jr., 366
 Survey of chemists, 789
 Swanscombe man, W. L. Straus, Jr., 410
 Sweetpotato internal cork virosis indexed on Scarlett O'Hara morning glory, E. M. Hildebrand, 506
 Symposia in Utopia, R. L. Taylor, 253
 Synthesis of coffinite— $USiO_4$, H. R. Hoekstra and L. H. Fuchs, 105
 Synthesis of 5-hydroxypipicolinic acid and separation of its diastereoisomers, L. A. Cohen, F. Irreverre, K. A. Piez, B. Witkop, H. L. Wolff, 842
 Systematic control of cherry leaf-spot fungus by foliar sprays of acidione derivatives, J. M. Hamilton, M. Szkolnik, E. Sondheimer, 1175

T

Tatum, A. L., practical pharmacologist, F. E. Shideman, 449
 Temperature control in the measurement of particle volumes by the isopiestic method, F. W. Leavitt and S. Kaye, 934
 Tergal and cercal secretion of *Blatta ori-*

entalis L., L. M. Roth and W. H. Stahl, 798
 Test by testimonial (editorial), G. DuShane, 1059
 Theobald Smith award judges, 1167
 Theory of ice ages, a, M. Ewing and W. L. Donn, 1061
 Tracing atmospheric pollutants, 451
 Trail of sulfur research: from insulin to oxytocin, V. du Vigneaud, 967
 Transformation of normal human fibroblasts into histologically malignant tissue *in vitro*, J. Leighton, I. Kline, H. C. Orr, 502
 Transmission-type photomultiplier, 663
 Two education committees established by the President, 662
 Two methods of obtaining least squares lines, I. H. Sher, 102
 Two obscure oyster enemies in New England waters, V. L. Loosanoff, 1119

U

Ultraviolet absorption spectra of lichen depsides and depsidones, M. E. Hale, 671
 U.N. committee on radiation effects, 928
 U.N. economic and social council agenda, 717
 UNESCO technical aid budget, 134
 Urea complexes of lithium chloride, W. G. McGavock, J. M. Bryant, W. W. Wendlandt, 897
 U.S. Geological Survey, 258
 U.S. Geological Survey radiocarbon dates III, M. Rubin and H. E. Suess, 442
 U.S. population, 1955, 218
 U.S. rubber research, 217
 U.S. technical education, 928
 U.S. visitors and soviet science, 1067
 Use and abuse of English in science, J. R. Baker, 720
 Use of glycine in bovine semen extenders stored at 5° and -78°C, J. M. Rakes and O. T. Stallcup, 224

V

Verifying useless knowledge, N. G. Demy, 725
 Virus of bats antigenically related to St. Louis encephalitis, K. F. Burns and C. J. Farinacci, 227
 Visit to Moscow, 1110
 Volatility of metallo-porphyrin complexes, J. G. Erdman, V. G. Ramsey, W. E. Hanson, 502

W

What are variables and constants? K. Menger, 547
 What happens to science fair participants? 1111
 What's right with science news reporting? H. Krieghbaum, 707
 Where is the definitive experiment? G. R. Price, 17
 "Whirling behavior" in dogs as related to early experience, W. R. Thompson, R. Melzack, T. H. Scott, 939
 WHO and nuclear energy, 366
 Wisconsin climate and life zones in North America, L. S. Dillon, 167
 Wisconsin's science writing program, J. A. Larsen, 720
 Witness for science, the (editorial), D. Wolfle, 1149
 World symposium on applied solar energy, G. Benveniste and M. L. Kastens, 826

Y

Yale natural radiocarbon measurements, II, R. S. Preston, E. Person, E. S. Deevey, erratum, 464

Z

Zoonoses, W. L. Straus, Jr., 94

Author Index

A

Abood, L. G., 545
 Abramovitz, M. *See* Michael, A. S., 464
 Abramson, H. A. *See* Evans, L. T., 26
 Adams, C. R., 622
 Adams, E., 149
 Adams, M. H., 146, 739, 1166
 Adashko, J. G., 287
 Adlersberg, D. *See* Sohar, E., 461
 Ajello, L., 876
 Akazawa, T., 1075
 Aldrich, L. T., 871
 Aleem, A. A., 183
 Algeri, E. J., 183
 Allen, B. R., 1080
 Allen, V. T., 851
 Aller, L. H., 735
 Amsz, J., Jr., 463
 Anderson, C. P., 921
 Anderson, E. P. *See* Isselbacher, K. J., 635
 Anderson, J. T. *See* Keys, A., 29
 Anderson, R. S., 638
 Arends, T. *See* Layrisse, M., 633
 Argyris, T. S., 634
 Armsby, H. H., 727
 Arvy, L., 382
 Asimov, I., 1041
 Askovitz, S. I., 507
 Astin, A. V., 895
 Atkinson, W. B. *See* Smith, E. W., 941

B

Babers, F. H., 420
 Babson, A. L., 1082
 Bachofer, C. S., 139; erratum, 323
 Bacq, Z. M., 845
 Baker, J. R., 713
 Baker, J. R., 720
 Ball, G. H., *See* Chao, J., 228
 Bandy, O. L., 459
 Bardawill, C. J. *See* McCulloch, E. A., 1084
 Barer, R., 24
 Barlow, J. S., 229
 Barnett, H. L., 141
 Bartelmez, G. W., 672
 Bass, A. D., 283
 Bass, A. D., 372
 Bastron, H. *See* Murata, K. J., 888
 Bates, M., 107
 Baus, R. A. *See* Blifford, I. H., Jr., 1120
 Bayne-Jones, S., 108
 Beatty, H. A., 365
 Behnke, J. A., 834
 Békésy, Georg v., 779
 Bélanger, L. F., 1074
 Benditt, E. P., 24
 Benesch, R., 981
 Benesch, R. E. *See* Benesch, R., 981
 Benjamin, H. B., 1128
 Bennett, E. L. *See* Rosenzweig, M. R., 371
 Bennett, H. J., 942
 Benveniste, G., 826
 Benz, R. W. *See* Ott, D. G., 1071
 Bergmann, P. G., 487
 Bergmann, P. G., 732
 Berkner, L. V., 783
 Berry, E. W., 736
 Berry, E. W., 1044
 Berry, J. F., 468
 Bevenue, A. *See* Schwimmer, S., 543
 Bevilacqua, E. M., 1123
 Bharucha-Reid, R. P., 222
 Bhattacharya, G., 505
 Bishop, G. H. *See* McCulloch, W. S., 725
 Black, D. M., 937
 Black, J. W., 215
 Blackwelder, R. E., 281
 Blade, L. W. *See* Cheosakul, P., 375
 Blifford, I. H., Jr., 619
 Blifford, I. H., Jr., 1120
 Bloch, R., 1134
 Boeseman, M., 222, 1035
 Bordt, F. J., 336

Bossak, E. T., *See* Sohar, E., 461
 Boulding, J. E., *See* McGeer, P. L., 1078
 Boutry, G. A., 423
 Boyd, W. C., 738
 Bozorth, R. M., 189
 Brackett, F. S., 1086
 Brady, A. J. *See* Woodbury, J. W., 100
 Brady, J. V., 1033
 Braun, G. *See* Silver, R. K., 932
 Bray, R. G., 549
 Bridgman, P. W., 15
 Briggs, L. J., 672
 Brink, R. A., 672
 Britton, A. *See* McCulloch, E. A., 1084
 Brodie, B. A., 992
 Brodie, B. B., 110
 Brody, M. *See* Emerson, R., 673
 Bronowski, J., 710
 Brown, C. *See* Miller, A., 934
 Brown, F. R., Jr. *See* Kinsell, L. W., 585
 Brown, M. C., 589
 Brown, R. W., 1131
 Brown, W. F., Jr., 722
 Brunswik, E. *See* McCulloch, W. S., 725
 Bryan, W. R. *See* Groupé, V., 1073
 Bryant, J. M., *See* McGavock, W. G., 897.
See also Wendlandt, W. W., 1121
 Bryngelson, B., 145
 Bubl, E. C., 1178
 Buchsbaum, R., 549
 Buckaloo, G. W., 333
 Buckwalter, J. A., 840
 Bullard, E. C. *See* Astin, A. V., 895
 Bunting, R. W., 284
 Burchard, J. E., 615
 Burkholder, L. M. *See* Burkholder, P. R., 1071
 Burkholder, P. R., 1071
 Burnet, F. M., 1101
 Burns, A. E., 745
 Burns, K. F., 227
 Burwash, R. A. *See* Shillibeer, H. A., 938
 Busse, J. G., 185
 Byerly, P., 1109
 Byerly, T. C., 30

C

Callaghan, J. J., 894
 Cameron, C. *See* Rosenthal, A., 1177
 Campbell, F. L., 576
 Canon, H. J. *See* Smith, K., 418
 Carey, J. B., Jr., 892
 Carlson, A. J., 144
 Carmichael, L., 821
 Carnap, R. *See* McCulloch, W. S., 725
 Carrier, G. *See* Munk, W., 127
 Carroll, R. W. *See* Petersen, C. S., 546
 Carson, H. L., 630
 Carter, A. E., 669
 Carter, H. E., 54
 Carter, W. J., 325
 Carvin, F. D., 283
 Cederstrand, C. *See* Emerson, R., 673
 Cell, J. W., 551
 Chalmers, R. *See* Emerson, R., 673
 Chandrasekhar, S., 672
 Chao, J., 228
 Charr, A. *See* Huggins, C., 674
 Cheng, C. C. *See* Hsu, T. C., 848
 Cheosakul, P., 375
 Childs, R. *See* Schwarz, H. P., 328
 Chinetti, P. *See* Leibowitz, H., 668
 Christian, J. E., 285
 Chu, E. C. *See* Scott, D. B. McN., 1036
 Clark, P. J., 373
 Clay, M. *See* Allen, B. R., 1080
 Clemence, G. M., 567
 Clothier, R. C., 408
 Clugston, H. *See* Rugh, R., 28
 Cobey, F. A., 140
 Cohen, C., 935
 Cohen, I. B., 66
 Cohen, L. A., 842
 Cohen, M. B., 510
 Cohen, S. S., 653
 Cohn, D. V. *See* Buckaloo, G. W., 333

Colbert, E. H., 593
 Coleman, J. W., 795
 Coleman, N. T., 330
 Colmer, A. R. *See* Bennett, H. J., 942
 Colter, D. C. *See* Buckwalter, J. A., 840
 Committee on Genetic Effects of Atomic Radiation, National Academy of Sciences, Genetic Effects of Atomic Radiation, 1157
 Committee on Loyalty in Relation to Government Support of Unclassified Research, 660
 Commoner, B., 282
 Conant, R., 975
 Connell, C. E., *See* Odum, E. P., 892
 Cook, E. B. M., 1137
 Cooper, K. W., 787
 Corley, R. C., 852
 Corson, S. A., 335, 851, 899
 Coulson, C. A., 729
 Cunningham, B. B., 944
 Curry, G. M. *See* Thimann, K. V., 676
 Curtis, J. T., 799
 Cutting, W., 744

D

Dale, R. F. *See* Amsz, J., Jr., 463
 DallaValle, J. M., 737
 Dalton, H. C., 380
 Danon, M. *See* Sachs, L., 548
 Daunt, J. G., 190
 Davignon, A. *See* Genest, J., 503
 Deevey, E. S. *See* Preston, R. S., 464
 Degering, E. F., 279
 Deighmann, E., 592
 DeLamater, E. D. *See* Scott, D. B. McN., 1036
 DeLong, D. M. *See* Lea, A. O., 890
 Demoran, W. J., 1126
 Demy, N. G., 725
 Dennis, W., 724
 Denny, G. H., Jr., 987
 Denton, D. A. *See* Goding, J. R., 986
 Deverell, M. W. *See* Moskowitz, M., 1077
 Diengott, D. *See* Mirsky, I. A., 583
 Dillon, L. S., 167
 Dimond, J. B. *See* Lea, A. O., 890
 Dix, R. *See* Curtis, J. T., 799
 Doerschuk, A. P. *See* Miller, P. A., 1030
 Doke, T. *See* Tajima, E., 211
 Dole, M. *See* Lane, G. A., 574
 Dolger, H. *See* Mirsky, I. A., 583
 Dollard, J., 334
 Donn, W. L. *See* Ewing, M., 1061
 Dragstedt, L. R., 496, 673
 Dragstedt, L. R., II *See* Dragstedt, L. R., 673
 Dreisbach, L. *See* Schwarz, H. P., 328
 duBuy, H. G. *See* Mattern, C. F. T., 1037
 Duisberg, P. C., 379, 1085
 Dulin, W. E. *See* Miller, W. L., Jr., 584
 Dunlap, J. S. *See* Johnson, V. L., 229
 DuShane, G., 85, 165, 380, 437, 467, 525, 539, 565, 703, 728, 730, 869, 1059, 1107

E

Eagle, H., 845
 Edmondson, F. K., 109, 280
 Edsall, J. T. *See* Carter, H. E., 54
 Edsall, J. T., 899
 Egdahl, R. H., 418
 Eilers, A. *See* Izzo, J. L., 417
 Einwohner, T. *See* Eyring, H., 673
 El-Ani, A. S., 850
 Emerson, R., 673
 Emiliani, C., 460, 924
 Englander, H. R. *See* Carter, W. J., 325
 Enns, T. *See* Scholander, P. F., 59
 Erdman, J. Gordon, 502
 Erhardt, C. L., 747
 Erikson, G. E., 944
 Esnouf, M. P. *See* Barer, R., 24
 Evans, F. C., 1127
 Evans, L. T., 26
 Evans, S. O. *See* Dragstedt, L. R., 673

Ewing, M., 1061
Eyring, H., 673

F

Fabing, H. D., 886
Falk, G., 632
Falk, H. L. *See* Kotin, P., 102
Fankuchen, I., 591
Farinacci, C. J. *See* Burns, K. F., 227
Feely, H. W. *See* Jones, G. E., 1124
Feinstein, M. *See* Henstell, H. H., 1118
Fenton, W. N., 69
Feshbach, H., 550
Feynmann, R. P., 307
Fingerman, M., 585
Fleischer, R., 512
Fonnesu, A., 324
Forbes, J. M., 730
Forbis, R. G., 327
Fosberg, F. R., 550
Fosdick, L. S., 988
Fox, A. S., 143
Franklin, B., 47
Franson, K. D. *See* Miller, A., 934
Frech, M. E. *See* Swartz, M. N., 50
Freeman, A. *See* Eagle, H., 845
Frick, F. C., 747
Fried, M. H., 746
Frings, H., 1088
Frings, M. *See* Frings, H., 1088
Friskey, R. W. *See* Kinsell, L. W., 585
Frye, A. H., 188
Fuchs, L. H. *See* Hoekstra, H. R., 105
Fulton, J. F., 1023
Furth, J. *See* Mayer, J., 184

G

Gabe, M. *See* Arvy, L., 382
Galambos, R., 376
Galindo, P. *See* Trapido, H., 634
Garfield, E., 62
Garman, R. L., 734
Gaunt, R., 231
Gehman, H., 1134
Geiger, A. *See* Gerard, R. W., 673
Genest, J., 503
Gerard, R. W., 673
Gero, A., 100
Geronimus, L. H. *See* Evans, L. T., 26
Gibbons, A. J. *See* Greig, M. E., 939
Gibson, W. C. *See* McGeer, P. L., 1029
Glass, B., 726, 777, 927, 1067
Gleason, J. R. *See* McGeachin, R. L., 841
Glinos, A. D., 673
Goding, J. R., 986
Goldberg, E. D., 67, 1135
Goldberger, M. L., 66
Goldin, A., 840
Green, J. A. *See* Williams, R. P., 1176
Greene, C. R., 227
Greig, M. E., 939
Grisham, J. W. *See* Bass, A. D., 732
Grosch, D. S., 141
Groupé, V., 1073
Grubbs, R. C. *See* Mitchell, W. G., 223
Grundfest, H., 289
Gubler, C. J., 87; *erratum*, 636
Gunter, G., 495. *See also* Demoran, W. J., 1126
Gustafson, A. H. *See* Moulton, J. M., 992
Gutcho, M. *See* Benesch, R., 981
György, P. *See* Silver, R. K., 932

H

Haag, H. B. *See* Cobey, F. A., 140
Haendler, H. M., 459
Hagerman, D. D. *See* Denny, G. H., Jr., 987
Hale, M. E., 671
Hall, R. N., 422
Hamilton, J. M., 1175
Hanson, W. E. *See* Erdman, J. G., 502
Harlow, E. S., 226
Harrold, J. P., 281
Hasselstrom, T., 1038
Hawkins, J. R. *See* Fabing, H. D., 886

Hayes, F. N. *See* Ott, D. G., 1071
Heatwole, T. C., 286, 976
Heinrich, E. W., 110
Helliwell, R. A., 788
Hendricks, S. B., 740
Henry, M. C. *See* Hasselstrom, T., 1038
Henstell, H. H., 1118
Henze, R. E., 1174
Heppel, L. A., 415
Herbst, F. S. M., 843
Hernández-Peón, R., 331
Herre, A. W. C. T., 1035
Hertert, L. D., 178
Hertzka, K., 286
Hess, G. E., 982
Hess, W. M. *See* Ladd, W. A., 370
Hildebrand, E. M., 506, 1034
Himwich, H. E., 284
Hirschfelder, J. O., 674
Hobbs, M. E., 737
Hoekstra, H. R., 105
Hoerman, K. C. *See* Carter, W. J., 325
Hoffman, J. *See* Vernon, J., 1074
Hoffman, J. I. *See* McElroy, A. M., 945
Holden, A. N., 465
Hollander, D. H. *See* Lamanna, C., 989
Holt, A. S. *See* Coleman, J. W., 795
Holtfreter, J., 674
Holton, C. H., 280
Horsfall, F. L., Jr., 61, 674
House, H. L. *See* Barlow, J. S., 229
Howe, H. A., 145
Howell, F. C., 591
Hsu, T. C., 848
Huggins, C., 674
Hume, D. M. *See* Egdahl, R. H., 418
Humphreys, S. R., *See* Goldin, A., 840
Hunter, M. A., 1085

I

Ihrig, H. K. *See* Benjamin, H. B., 1128
Irreverre, F. *See* Cohen, L. A., 842
Irwin, J. B., 577
Isaac, W., 1170
Isselbacher, K. J., 635
Itano, H. A. *See* Thorup, O. A., 889
Ivanoff, S. S., 1125
Izzo, J., 417

J

Jackson, L. W. R., 108
Jaffe, A. J., 421
Jaffe, L., 1081
Jakoby, W. B., 940
Jaworski, E. G., 847
Jenkins, G. L., 677
Johnson, D. H., 743
Johnson, V. L., *erratum*, 229
Johnston, H. S., 638
Jones, G. E., 1124
Jones, L. H. P., 1116
Joseph, S. *See* Barer, R., 24
Jouvet, M. *See* Hernández-Peón, R., 331

K

Kaiser, I. H. *See* Makowski, E. L., 542
Kalckar, H. M. *See* Isselbacher, K. J., 635
Kalter, S. S. *See* Prier, J. E., 586
Kammer, A. G., 510
Kamrin, B. B., 1179
Kantor, J. R., 214
Kanwisher, J. W. *See* Scholander, P. F., 104
Kao, C. Y., 803
Kaplan, N. O. *See* Swartz, M. N., 50
Kaplan, N. O. *See* Weber, M. M., 844
Kastens, M. L. *See* Benveniste, G., 826
Katchalski, E. *See* Sela, M., 1129
Kato, J., 1132
Kaufmann, B. P., 995
Kaye, S. *See* Leavitt, F. W., 934
Keiding, J., 1173
Keim, F. D., 285
Kelly, F. H. *See* Mayer, S. W., 26
Kelly, H. C., 177
Kennedy, S. J., 110

Kerr, N. S. *See* Sussman, M., 1171
Kerr, V. N. *See* Ott, D. G., 1071
Keys, A., 29
King, L. J., 334
King, P. B., 735
King, P. D., 985
King, T. E., 854
Kinsell, L. W., 585
Kissinger, D. G., 898
Kistiakowsky, G. B., 67
Kline, I. *See* Leighton, J., 502
Knox, A. S., 1118
Knudson, A. *See* Cheosakul, P., 375
Koiv, E. *See* Genest, J., 503
Komai, T., 823
Kornetsky, C. *See* Evans, L. T., 26
Kotin, P., 102; *erratum*, 378
Kounin, J. S., 420
Kramer, G., 329
Krause, R. F. *See* Barnett, H. L., 141
Krech, D. *See* Rosenzweig, M. R., 371
Kreighbaum, H., 707
Kulp, J. L. *See* Jones, G. E., 1124
Kurashiki, K. *See* Isselbacher, K. J., 635
Kurtz, S. S., Jr., 832
Kusch, P., 207

L

Labaw, L. W., 849
LaChance, L. E. *See* Grosch, D. S., 141
Ladd, M. W. *See* Ladd, W. A., 370
Ladd, W. A., 370
LaDue, J. S., *See* Wróblewski, F., 1122
Lajtha, A., 511
Lamanna, C., 989
Lamb, W. E., Jr., 439
Landau, W. M., 895
Lane, G. A., 574
Lark-Horovitz, K., 732, 1165
Larsen, J. A., 720
Laufer, L. *See* Benesch, R., 981
Layrisse, M., 633
Lea, A. O., 890
Leavell, B. S. *See* Thorup, O. A., 889
Leavitt, F. W., 934
Lee, C.-C., 65
Lee, F. *See* Sussman, M., 1171
Leibowitz, H., 668
Leighton, J., 502
Leikind, M. C., 731
Lemieux, G. *See* Genest, J., 503
Lerner, E. M., 258, 450
Lever, W. F. *See* Herbst, F. S. M., 843
Levi, L., 64
Levine, S., 185; *erratum*, 323
Levinson, N., 637
Levy, M. *See* Eagle, H., 845
Lewis, W. B. *See* Astin, A. V., 895
Li, C. H., 617
Libby, W. F., 657
Liddle, G. W., 324
Lijinsky, W. *See* Kotin, P., 102
Lilly, V. G. *See* Barnett, H. L., 141
Lindgren, C. C., 897
Livingston, R., 107
Lockhart, L. B., Jr. *See* Blifford, I. H., Jr., 1120
Long, W. G., 1039
Longley, J. B., 142
Loomis, L. N., 1042
Loosanoff, V. L., 1119
Lowe, C. H., Jr. *See* Yang, T. W., 542
Luck, J. M., 984
Luckwill, L. C., 225
Luyten, W. J., 896
Lynch, V. H. *See* Shrehler, B. L., 462

M

Magalini, S. I., 796
Makowski, E. L., 542
Mallinson, G. G., 286
Mangelsdorf, P. C., 380
Mantel, N. *See* Goldin, A., 840
Marcus, R. J., 399
Marks, B. H., 332
Maryott, A. A., 899

Mastrangelo, S. V. *See* Schwarz, H. P., 328
 Matheson, B. H. *See* Levi, L., 64
 Mattern, C. F. T., 1037
 Mayer, J., 184
 Mayer, S. W., 26
 Mayor, J. R., 624, 919. *See also* Wallen, I. E., 880, 1166
 McArdle, A. H. *See* Bass, A. D., 372
 McBay, A. J. *See* Algeri, E. J., 183
 McBride, J. J., Jr. *See* Wander, I. W., 933
 McClung, A. C. *See* Coleman, N. T., 330
 McConnell, D., 231
 McCormick, J. R. D. *See* Miller, P. A., 1030
 McCulloch, E. A., 1084
 McCulloch, W. S., 725
 McElroy, A. M., 945
 McGavock, W. G., 897
 McGeachin, R. L., 841
 McGeer, E. G. *See* McGeer, P. L., 1029, 1078
 McGeer, P. L., 1029, 1078
 McKeen, W. E., 509
 McKinney, R. *See* Moskowitz, M., 1077
 McManus, A. G. *See* Quan, S. F., 942
 Mead, A. R., 1130
 Mead, J. F. *See* Schjeide, O. A., 1020
 Meehl, P. E., 14
 Melamed, S. *See* Seidlin, S. M., 800
 Melzack, R. *See* Thompson, W. R., 939
 Menger, K., 547. *See also* McCulloch, W. S., 725
 Menkin, V., 527
 Mercier, A., 994
 Meyer-Arendt, J., 1176
 Meyers, R. *See* McCulloch, W. S., 725
 Meyrowitz, R. *See* Thompson, M. E., 990, 1078
 Michael, A. S., 464
 Michaels, G. D. *See* Kinsell, L. W., 585
 Mickelsen, O. *See* Keys, A., 29
 Miller, A., 934
 Miller, P. A., 1030
 Miller, W. L., Jr., 584
 Miller, Z., 797
 Minsavage, E. J. *See* Scott, D. B. McN., 1036
 Minto, W. L., 419
 Mirsky, I. A., 583
 Mitchell, W. G., 223
 Mitz, M. A., 1076
 Moeller, T., 67
 Mohler, F. L., 279
 Moore, D. P. *See* Coleman, N. T., 330
 Moore, R. C., 550
 Moran, N. C., 187
 Morehouse, M. G., 1032
 Morgan, M. G. *See* Helliwell, R. A., 788
 Morse, P. M., 674
 Morton, M. E. *See* Mayer, S. W., 26
 Moskowitz, M., 1077
 Moulton, J. M., 992
 Movius, H. L., Jr., 92
 Munk, W., 127
 Murata, K. J., 888
 Murphy, G. M., 733
 Murphy, W. J., 677
 Murray, A. W. *See* Siperstein, M. D., 377
 Muschel, L. H., 62
 Muto, T. *See* Muschel, L. H., 62
 Myers, L. S., Jr. *See* Schjeide, O. A., 1020

N

Nachmansohn, D., 591
 Nauman, R. V. *See* Bennett, H. J., 942
 Naylor, A. W., 282
 Neff, W. D., 282
 Nettleship, A., 505
 Nettleship, M. *See* Nettleship, A., 505
 Neugebauer, O. *See* Adams, C. R., 622
 Neurath, H. *See* Carter, H. E., 54
 Nicholas, B. G., 280
 Nichols, R. L., 280
 Nickerson, D., 678
 Niegisch, W. D. *See* Roth, L. M., 670

Norman, J. B., 284
 Nowaczynski, W. *See* Genest, J., 503
 Nutt, D. C. *See* Scholander, P. F., 104

O

Ochoa, S. *See* Heppel, L. A., 415
 Odegard, P. H., 1133
 Odishaw, H., 287, 722
 Odum, E. P., 892
 Olitzki, A. L. *See* Sela, M., 1129
 Oliver, C. P., 266
 Oncal, G., Jr. *See* Brown, W. F., Jr., 722
 Opdyke, N. D., 1126
 Oppenheimer, J. M., 282
 Oppenheimer, R., 397
 Orr, H. C. *See* Leighton, J., 502
 Ortiz, P. J. *See* Heppel, L. A., 415
 Osgood, T. H., 549
 Ott, D. G., 1071
 Oyama, V. I. *See* Eagle, H., 845

P

Page, R. M., 1043
 Palmer, J. K., 415
 Pappenheimer, J. R., 740
 Pardee, A. B., 725
 Parker, V. E. *See* Bennett, H. J., 942
 Parks, W. G., 91
 Parks, W. G., 357
 Patterson, G. W., 881
 Pauling, L., 255
 Peaslee, D. C., 733
 Pennak, R. W., 852
 Pentimalli, F., 458
 Peppler, H. J. *See* Amsz, J., Jr., 463
 Perot, P. L., Jr., 802
 Person, E. *See* Preston, R. S., 464
 Petersen, C. S., 546
 Petrunkevitch, A., 675
 Piez, K. A. *See* Cohen, L. A., 842
 Platt, R. S., Jr., 105
 Plaut, A., 465, 1043
 Pletscher, A. *See* Brodie, B. A., 992
 Plough, H. H., 281
 Poel, W. E., 588
 Porter, J. R., 637
 Posinsky, S. H., 995
 Pound, G. S., 282
 Powell, J. L., 187
 Powell, L. E., Jr. *See* Luckwill, L. C., 225
 Powers, P. N., 595
 Pratt, J. G. *See* Kramer, G., 329
 Prem, K. A. *See* Makowski, E. L., 542
 Prentice, D. D., 288
 Preston, R. S., erratum, 464
 Price, D., 1042
 Price, G. R., 17
 Prier, J. E., 586
 Pullman, M. E., 1105
 Purpura, D. P., 804

Q

Quan, S. F., 942

R

Rabinowitch, E. *See* Coleman, J. W., 795
 Racker, E. *See* Pullman, M. E., 1105
 Ragins, H. *See* Dragstedt, L. R., 673
 Rakes, J. M., 224
 Ralli, E. P., 231
 Ramaswami, L. S., 1080
 Ramberg, E. G., 230
 Ramirez, F., 945
 Ramsey, V. G. *See* Erdman, J. G., 502
 Rappoport, D. A. *See* Williams, R. P., 1176
 Rauscher, F. J. *See* Groupé, V., 1073
 Rawnsley, H. M., 991
 Ray, D. P., 282
 Read, D., *See* Rosenthal, A., 1177
 Ree, T. *See* Eyring, H., 673
 Reese, V. J. *See* Gero, A., 100
 Reinert, J., 457
 Reinhold, J. G. *See* Rawnsley, H. M., 991
 Reithel, F. J., 1083
 Reynolds, B. D., 281

Rhine, J. B., 11, 19
 Richard, J. E. *See* Liddle, G. W., 324
 Richards, J. B. *See* Egdaahl, R. H., 418
 Richter, C. F., 723
 Ris, H., 994
 Roach, C. H. *See* Thompson, M. E., 990, 1078
 Robbins, P. H., 134
 Robins, R. K. *See* Hsu, T. C., 848
 Rockstein, M., 534
 Rodbard, S., 1045
 Rollins, R. C., 831
 Rosenstock, H. B. *See* Blifford, I. H., Jr., 619
 Rosenthal, A., 1177
 Rosenzweig, M. R., 371
 Rosi, F. D., 675
 Roth, L. M., 670, 798
 Rowley, D. A. *See* Benditt, E. P., 24
 Rubin, M., 442
 Ruch, T. C. *See* Isaac, W., 1170
 Rueggsegger, P. *See* Wróblewski, F., 1122
 Rugh, R., 28
 Runcorn, S. K. *See* Opdyke, N. D., 1126

S

Sabin, A. B., 1151
 Sachs, L., 548
 Sandberg, A. E. *See* Bennett, H. J., 942
 Saporta, S., 730
 Sato, G. H., 891
 Savage, L. J., 511
 Sawaya, P., 538
 Sayvetz, A., 729
 Schales, O. *See* Carter, H. E., 54
 Schantz, E. J. *See* Hess, G. E., 982
 Scharrer, B. *See* Arvy, L., 382
 Scherrer, H. *See* Hernández-Peón, R., 331
 Schiefer, H. F., 853
 Schjeide, O. A., 1020
 Schlegel, R., 335
 Schmitt, W. L., 744
 Schneider, H. A., 230
 Schneiderman, H. A., 379
 Schoenbach, U. H., 61
 Scholander, P. F., 59, 104
 Schwarz, H. P., 328
 Schweet, R. S., 739
 Schwimmer, S., 543
 Scott, D. B. McN., 1036
 Scott, J. F., 144
 Scott, T. H. *See* Thompson, W. R., 939
 Scriven, M. *See* Meehl, P. E., 14
 Searcy, R. L. *See* Morehouse, M. G., 1032
 Sears, P. B., 974
 Seidlin, S. M., 800
 Sela, M., 1129
 Seroussi, A. *See* Kokoloff, V. P., 587
 Serr, D. M. *See* Sachs, L., 548
 Severi, C. *See* Fonnesu, A., 324
 Shaffer, B. M., 1172
 Shapiro, M. M., 734
 Sharpe, H. E., 577
 Shea, R. F., 733
 Sheatz, G. *See* Galambos, R., 376
 Shechmeister, I. L., 463
 Shepard, F. P., 1082
 Sher, I. H., 102
 Sherman, J. F., 1170
 Shideman, F. E., 449
 Shillibeer, H. A., 938
 Shklair, I. L. *See* Carter, W. J., 325
 Shore, P. A. *See* Brodie, B. A., 992
 Siegel, E. *See* Seidlin, S. M., 800
 Silver, R. K., 932
 Sinnott, E. W., 731
 Sinton, W. M. *See* Strong, J., 676
 Siperstein, M. D., 377
 Sjoerdsma, A. *See* Udenfriend, S., 669
 Slepian, J., 675
 Smith, C. F., 1022
 Smith, E. W., 941
 Smith, H. H., 510
 Smith, K., 418
 Smith, W. E., 1085
 Smowski, J. *See* Leibowitz, H., 668

- Smyth, C. P., 93, 675
 Smythe, C. V. *See* Carter, H. E., 54
 Snell, G. D., 675
 Snodgrass, F. *See* Munk, W., 127
 Soal, S. G., 9
 Sobel, A. E., 280
 Sohar, E., 461
 Sondheimer, E. *See* Hamilton, J. M., 1175
 Soroloff, V. P., 587
 Sproull, W. T., 109
 Srb, A. M., 233
 Stahl, W. H. *See* Roth, L. M., 670, 798
 Stallcup, O. T. *See* Rakes, J. M., 224
 Stanley, W. M., 353
 Stapleton, G. E., 679
 Starkey, R. L. *See* Jones, G. E., 1124
 Stebbins, G. L., 721
 Stefanini, M. *See* Magalini, S. I., 796
 Stehli, F. G., 1031
 Stein, S. N. *See* Perot, P. L., Jr., 802
 Stevens, S. S., 676
 Steyermark, P. *See* Genest, J., 503
 Stocking, C. R., 1032
 Stone, W. S., 743
 Straus, W. L., Jr., 55, 94, 410, 498, 566, 679, 945, 1024
 Strehler, B. L., 462
 Strong, J., 676
 Stunkard, H. W., 879
 Suess, H. E., 355. *See also* Rubin, M., 442;
 Shepard, F. P., 1082
 Sun, C. N., 1129
 Sundararaj, B. I. *See* Ramaswami, L. S., 1080
 Super, D. E., 1087
 Sussman, M., 1171
 Swartz, M. N., 50
 Sweet, D. V. *See* Long, W. G., 1039
 Switzer, G., 1039
 Szent-Gyorgyi, A. *See* McCulloch, W. S., 725
 Szkolnik, M. *See* Hamilton, J. M., 1175

T

- Tajima, E., 211
 Taliaferro, I. *See* Cobey, F. A., 140
 Taylor, R. L., 253, 273, 421, 947
 Telkes, M., 188
 Terasmae, J., 801
 Thatcher, F. S. *See* Levi, L., 64
 Thimann, K. V., 676. *See also* Platt, R. S., Jr., 105
 Thomas, C. A., Jr., 60
 Thompson, C. G. *See* Michael, A. S., 464
 Thompson, M. E., 990, 1078
 Thompson, W. R., 939
 Thorup, O. A., 889
 Thurber, J., 705
 Tidrick, R. T. *See* Buckwalter, J. A., 840
 Todd, D. K., 187
 Toll, J. S., 805
 Tomkins, G. M., 737. *See also* Jakoby, W. B., 940
 Toomey, E. G., 507
 Torralba, Y. *See* Huggins, C., 674
 Towe, A. L., 936
 Trapido, H., 634
 Trussell, M., 287
 Tryon, K., 590
 Trytten, M. H., 485
 Tukey, H. B. *See* Long, W. G., 1039
 Turner, J., 729, 1099
 Turner, J. C., 631
 Tuttle, A. H., 461
 Tyler, R. W., 405

U

- Udenfriend, S., 669
 Umbarger, H. E., 848
 Urban, S. F., 147

V

- van Dam, L. *See* Scholander, P. F., 59
 van de Kamp, Peter, 536
 Vanko, M. *See* Cheosakul, P., 375
 Van Middlesworth, L., 982

- Vann, L. S., 326
 Van Norman, R. W. *See* Callaghan, J. J., 894
 Vaughan, M., 885
 Velardo, J. T., 637, 738
 Venditti, J. M. *See* Goldin, A., 840
 Venkataraman, R. *See* Reithel, F. J., 1083
 Vernier, V. G. *See* Galambos, R., 376
 Vernon, J., 1074
 Vigneaud, V. du, 967
 Visscher, M. B., 337
 Volkoff, G. M., 592
 von Bertalanffy, L., 283, 805, 1135
 von Bonin, G. *See* McCulloch, W. S., 725
 von Fintel, H. *See* Quan, S. F., 942
 von Hippel, A., 315
 von Oettingen, W. F., 805
 von St. Paul, U. *See* Kramer, G., 329

W

- Waddell, W. R. *See* Herbst, F. S. M., 843
 Wade, J. S., 146, 742
 Wagner, M. *See* Benjamin, H. B., 1128
 Walker, G. W., 25
 Wallen, I. E., 880, 1166
 Walton, A. C., 281
 Wander, I. W., 933
 Wang, C.-I. *See* Sohar, E., 461
 Warburg, O., 309
 Wardell, H. G. *See* Allen, B. R., 1080
 Warren, L. H., 107, 379
 Weber, M. M., 844
 Weinberg, A. M., 381
 Weinhouse, S. *See* Carter, H. E., 54
 Weiskrantz, L., 1116
 Weiss, P., 741
 Weissbach, H. *See* Udenfriend, S., 669
 Weisskopf, V. F., 409
 Weisz, P. B., 887
 Welt, I. D., 723
 Wendlandt, W. W., 1121. *See also* McGavock, W. G., 897
 Werner, G. H. *See* Silver, R. K., 932
 Westerfeld, W. W., 1017
 Westrum, E. F., Jr., 552
 Wheby, M. *See* Thorup, O. A., 889
 Wheeler, H. E. *See* Bennett, H. J., 942
 White, G. F., 537
 Whiteker, R. A., 852
 Wieme, R. J., 460
 Wieser, W., 374
 Wightman, K. J. R. *See* McCulloch, E. A., 1084
 Wildhack, W. A., 511
 Williams, H. B. *See* Bennett, H. J., 942
 Williams, R. P., 1176
 Wilson, J. C., 735
 Wilson, P. W., 676
 Wilson, W. A., Jr. *See* Weiskrantz, L., 1116
 Winckler, J. R., 997
 Witkop, B., 898. *See also* Cohen, L. A., 842
 Wohlwend, E. B. *See* Buckwalter, J. A., 840
 Wolff, E. T., 288
 Wolff, H. L. *See* Cohen, L. A., 842
 Wolffe, D., 7, 45, 125, 205, 268, 651, 833, 965, 1015, 1149, 1184
 Wolfson, A., 1041
 Wolterink, L. F. *See* Lee, C.-C., 65
 Woodbury, J. W., 100
 Worcester, D. A., 285
 Wright, B. S. *See* Prier, J. E., 586
 Wróblewski, F., 1122
 Wyckoff, R. W. G. *See* Labaw, L. W., 849
 Wylie, C. C., 544; erratum, 850

Y

- Yagoda, H., 741
 Yalow, A. A. *See* Seidlin, S. M., 800
 Yang, T. W., 542
 Yonan, V. L. *See* Rawnsley, H. M., 991
 Young, L. C., 512
 Yuasa, A., 533

Z

- Zechmeister, L. *See* Kotin, P., 102
 Zeit, W. *See* Benjamin, H. B., 1128
 Zettlemoyer, A. C., 466
 Zilliken, F. *See* Silver, R. K., 932
 Zirkle, C., 728
 Zomzely, C. *See* Mayer, J., 184

Book Reviews

A

- Academic Freedom in our Time*, R. M. MacIver, 726
Actions Chimiques et Biologiques des Radiations, M. Haissinsky, Ed., 679
Active Transport and Secretion, No. VIII, R. Brown and J. F. Danielli, Eds., 638
Administrative Medicine, G. S. Stevenson, Ed., 379
Advances in Cancer Research, vol. III, J. P. Greenstein and A. Haddow, Eds., 465
Advances in Carbohydrate Chemistry, vol. 10, M. L. Wolfrom and R. S. Tipson, Eds., 1134
Advances in Geophysics, vol. 2, H. E. Landsberg, Ed., 1085
Advances in Veterinary Science, vol. II, C. A. Brandly and E. L. Jungherr, 1042
Advances in Virus Research, vol. III, K. M. Smith and M. A. Lauffer, Eds., 739
 Alberty, R. A. *See* Daniels, F., 737
Alkaloids, Chemistry and Physiology, The, vol. 5, R. H. F. Manske, Ed., 805
 Allen, C. W., *Astrophysical Quantities*, 735
 American Foundation, *Medical Research: a Midcentury Survey*, vols. 1 and 2, 744
American Men of Science, vol. II, J. Cattell, Ed., 421
 Andres, P. G., H. J. Miser, H. Reingold, *Basic Mathematics for Science and Engineering*, 551
 Androgens, R. I. Dorfman and R. A. Shipley, 738
Annual Review of Entomology, vol. I, E. A. Steinhaus and R. F. Smith, Eds., 742
Applications of Spinor Invariants in Atomic Physics, H. C. Brinkman, 1181
Arctic Research, D. Rowley, Ed., 900
Aspects of Synthesis and Order in Growth, D. Rudnick, Ed., 380
Astronomical Cuneiform Texts, vol. 1, *Introduction: The Moon*; vol. II, *The Planets*; vol. III, *Plates*, O. Neugebauer, Ed., 66
Astrophysical Quantities, C. W. Allen, 735
Atom und Psyche, E. F. von Eickstedt, 1135
Atomic Energy Research at Harwell, K. E. B. Jay, 381
Atomic Nucleus, The, R. D. Evans, 592
Atomic Power, Editors of *Scientific American*, 729
Automatic Control, Editors of *Scientific American*, 729

B

- Bailey, S. K., H. A. Simon, R. A. Dahl, R. C. Snyder, A. de Grazia, M. Moos, P. T. David, D. B. Truman, *Research Frontiers in Politics and Government*, 745
 Bakay, L., *The Blood-Brain Barrier with Special Regard to the Use of Radioactive Isotopes*, 740
 Balakhovskii, I. S. *See* Balakhovskii, S. D., 899
 Balakhovskii, S. D., and I. S. Balakhovskii, *Chemical Methods of Blood Analysis*, 899
 Bardell, P. R., *Magnetic Materials in the Electrical Industry*, 189
 Barker, R. G., and H. F. Wright, *Midwest and Its Children*, 420
Basic Mathematics for Science and Engineering, P. G. Andres, H. J. Miser, H. Reingold, 551

- Bauer, K. Fr., *Ergebnisse der Medizinischen Grundlagenforschung*, 995
 Bear, F. E., *Chemistry of the Soil*, 549
 Bellamy, E. H., and R. G. Moorhouse, Eds., *Proceedings of the 1954 Glasgow Conference on Nuclear and Meson Physics*, 639
 Bethe, H. A. See Schweber, S. S., 733
 Bethe, H. A., and F. de Hoffmann, *Mesons and Fields*, vol. II, Mesons, 66
Biochemical Preparations, vol. 4, W. W. Westerfeld, Ed., 852
Biochemistry and the Central Nervous System, H. McIlwain, 737
Biochemistry of the Developing Nervous System, H. Waelsch, Ed., 591
Biochemistry of Semen, The, T. Mann, 637
Biographical Memoirs of Fellows of the Royal Society, vol. I, Royal Society, 730
Biology of the Spirit, The, E. W. Sinnott, 729
Blood-Brain Barrier with Special Regard to the Use of Radioactive Isotopes, The, L. Bakay, 740
Blood Group Substances, E. A. Kabat, 1041
 Blüh, O., and J. D. Elder, *Principles and Applications of Physics*, 549
 Bochner, S., *Harmonic Analysis and the Theory of Probability*, 511
Bone, an Introduction to the Physiology of Skeletal Tissue, F. C. McLean and M. R. Urist, 740
 Bourne, G. H., and J. F. Danielli, Eds., *International Review of Cytology*, vol. IV, 995
 Brandly, C. A., and E. L. Jungherr, *Advances in Veterinary Science*, vol. II, 1042
 Brasted, R. C. See Sneed, M. C., 944
 Braude, E. A., and F. C. Nachod, Eds., *Determination of Organic Structures by Physical Methods*, 188
 Bridgman, P. W., *Reflections of a Physicist*, 994
 Brinkman, H. C., *Applications of Spinor Invariants in Atomic Physics*, 1181
 Broda, E., Ludwig Boltzmann, *Mensch, Physiker, Philosoph*, 732
 Bronsted, J. N., *Principles and Problems in Energetics*, 733
 Brown, R., and J. F. Danielli, Eds., *Active Transport and Secretion*, 638
 Burnet, F. M., *Principles of Animal Virology*, 145

C

- Cancer of the Lung*, M. B. Rosenblatt and J. R. Lisa, 1043
Cardiovascular Renal Problems, H. Popper and D. S. Kushner, Eds., 187
 Carpenter, P. L., *Immunology and Serology*, 738
 Carroll, J. B., Ed., *Language, Thought, and Reality*, 730
Catalysis, vol. II, P. H. Emmett, Ed., 466
 Cattell, J., Ed., *American Men of Science*, vol. II, 421
 Chargaff, E., and J. N. Davidson, Eds., *The Nucleic Acids: Chemistry and Biology*, vol. II, 144
Chemical Engineering, vol. 2, J. M. Coulson and J. F. Richardson, 737
Chemical Methods of Blood Analysis, S. D. Balakhovskii and I. S. Balakhovskii, 899
Chemistry and Chemical Technology of Cotton, K. Ward, Jr., Ed., 109
Chemistry and Fertility of Sea Waters, The, H. W. Harvey, 67
Chemistry of the Soil, F. E. Bear, Ed., 549
Chemistry of the Solid State, W. E. Garner, Ed., 465
Chemotherapy of Malaria, G. Covell, G. R. Coatney, J. W. Field, J. Singh, 110

- Christophersen, J. See Precht, H., 805
 Clark, W. E. Le G., *The Fossil Evidence for Human Evolution*, 591
Clays and Clay Minerals, A. Swineford and N. Plummer, Eds., 851
 Coatney, G. R. See Covell, G., 110
 Cold Spring Harbor Symposia on Quantitative Biology, *The Mammalian Fetus: Physiological Aspects of Development*, vol. XIX, 467
 Collinson, C. See Miller, A. K., 550
 Colowick, S. P., and N. O. Kaplan, *Methods in Enzymology*, vols. I and II, *Preparation and Assay of Enzymes*, 739
Comparative Endocrinology of Vertebrates, pt. I, I. C. Jones and P. Eckstein, Eds., 1042
Comparative Endocrinology of Vertebrates, pt. II, I. C. Jones and P. Eckstein, Eds., 1182
Comprehensive Inorganic Chemistry, vol. 4, M. C. Sneed and R. C. Brasted, Eds., H. M. Cyr and T. D. O'Brien, 944
Convolution Transform, The, I. I. Hirschman and D. V. Widder, 512
 Cook, J. W., Ed., *Progress in Organic Chemistry*, vol. 3, 945
 Coombes, R. H., *Soil Warming by Electricity*, 379
Corn and Corn Improvement, vol. V, G. F. Sprague, Ed., 380
 Cotton, C. A., *New Zealand Geomorphology*, 736
 Coudert, J., *Guide Pratique de Mycologie Médicale*, 1043
 Coulson, C. A., *Science and Christian Belief*, 731
 Coulson, J. M., and J. F. Richardson, *Chemical Engineering*, vol. 2, *Unit Operations*, 737
 Covell, G., G. R. Coatney, J. W. Field, J. Singh, *Chemotherapy of Malaria*, 110
Crime of Galileo, The, G. de Santillana, 1180
 Cummings, W. H. See Kaufert, F. H., 108
 Cyr, H. M. See Sneed, M. C., 944

D

- Dahl, R. A. See Bailey, S. K., 745
 Danielli, J. F. See Bourne, G. H., 995, and Brown, R., 638
 Daniels, F., and J. A. Duffie, Eds., *Solar Energy Research*, 188
 Daniels, F., and R. A. Alberty, *Physical Chemistry*, 737
 David, P. T. See Bailey, S. K., 745
 Davidson, J. N. See Chargaff, E., 144
 Davis, C. C., *The Marine and Fresh-Water Plankton*, 852
 de Broglie, L., *Physics and Microphysics*, 550
 de Grazia, A. See Bailey, S. K., 745
 de Hoffman, F. See Bethe, H. A., 66, and 733
 de Santillana, G., *The Crime of Galileo*, 1180
Determination of Organic Structures by Physical Methods, E. A. Braude and F. C. Nachod, Eds., 188
Development of Academic Freedom in the United States, The, R. Hofstadter and W. Metzger, 726
 DeWitt, N., *Soviet Professional Manpower, its Education, Training and Supply*, 727
Dielectric Behavior and Structure, C. P. Smyth, 899
Diffusion and Heat Exchange in Chemical Kinetics, D. A. Frank-Kamenetskii, 67
Diseases of Occupations, The, D. Hunter, 510
 Dobzhansky, T., *Evolution, Genetics, and Man*, 743
 Dodge, C. H. See Locke, A. S., 734
 Dorfman, R. I., and R. A. Shipley, *Androgens*, 738

- Draper, B., *The Science in Action TV Library*, vol. 1, 380
 Duffie, J. A. See Daniels, F., 188

E

- Echinodermata*, vol. IV, L. H. Hyman, 592
 Eckstein, P. See Jones, I. C., 1042 and 1182
 Editors of *Fortune*, *The Mighty Force of Research*, 728
 Editors of *Scientific American*, *Automatic Power*, 729
 Editors of *Scientific American*, *Automatic Control*, 729
 Editors of *Scientific American*, *First Book of Animals*, 729
 Editors of *Scientific American*, *The New Astronomy*, 729
 Editors of *Scientific American*, *The Physics and Chemistry of Life*, 729
 Elder, J. D. See Blüh, O., 549
Electro-Sleep, V. A. Giliarovskii, N. M. Liventsev, Yu. E. Segal, Z. A. Kirillova, 851
Electronic Transformers and Circuits, R. Lee, 733
 Elliott, K. A. C., I. H. Page, J. H. Quastel, Eds., *Neurochemistry*, 511
Embryologie, D. Starck, 741
 Emmett, P. H., Ed., *Catalysis*, vol. II, 466
Ergebnisse der Medizinischen Grundlagenforschung, K. Fr. Bauer, 995
 Erhart, H., *La Genèse des Sols en tant que Phénomène Géologique*, 1044
Essentials of Biological and Medical Physics, R. W. Stacy, D. T. Williams, R. E. Worden, R. O. McMorris, 1086
 Evans, R. D., *The Atomic Nucleus*, 592
Evolution, Genetics, and Man, T. Dobzhansky, 743
Extra Pharmacopoeia, The, vol. 2, Pharmaceutical Press, 677

F

- Faune de France. Coleopteres Curculionides*, A. Hoffman, 898
 Fell, E. W., *Flora of Winnebago County, Illinois*, 550
Fibrous Proteins and Their Biological Significance, No. IX, Symposia of the Society for Experimental Biology, 899
 Field, J. W. See Covell, G., 110
 Fiesz, F., and B. Sz.-Nagy, *Functional Analysis*, 637
Fifth Symposium (International) on Combustion, Standing Committee on Combustion Symposia of the Combustion Institute, 336
First Book of Animals, Editors of *Scientific American*, 729
 Fisher, H. J. See Horowitz, W., 945
Flora of Winnebago County, Illinois, E. W. Fell, 550
Forestry and Related Research in North America, F. H. Kaufert and W. H. Cummings, 103
Fossil Evidence for Human Evolution, The, W. E. Le G. Clark, 591
 Fournet, G. See Guinier, A., 591
 Frank-Kamenetskii, D. A., *Diffusion and Heat Exchange in Chemical Kinetics*, 67
 Fréchette, V. D. See Insley, H., 231
 Freud, S., *The Interpretation of Dreams*, 510
 Friederichs, K., *Die Selbstgestaltung des Lebendigen*, 1135
Frontiers of Astronomy, F. Hoyle, 512
Functional Analysis, F. Fiesz and B. Sz.-Nagy, 637

G

- Garner, W. E., Ed., *Chemistry of the Solid State*, 465

Gas Kinetics, A. F. Trotman-Dickenson, 638

Genese des Sols en tant que Phénomène Géologique, La, H. Erhart, 1044

Genus Nicotiana, The, T. H. Goodspeed, 510

George, S. F. See Locke, A. S., 734

Gignoux, M., *Stratigraphic Geology*, 1180

Gilchrist, L. F. See Locke, A. S., 734

Giliarovskii, V. A., N. M. Liventsen, Yu. E. Segal, Z. A. Kirillova, *Electro-Sleep*, 851

Glass, B. See McElroy, W. D., 740

Gonzales, T. A., M. Vance, M. Helpern, C. J. Umberger, *Legal Medicine. Pathology and Toxicology*, 107

Goodspeed, T. H., *The Genus Nicotiana*, 510

Green, H. D., Ed., *Shock and Circulatory Homeostasis*, 745

Greenstein, J. P., and A. Haddow, Eds., *Advances in Cancer Research*, vol. III, 465

Grundlagen der Analytischen Chemie und der Chemie in Wässrigen Systemen, F. Steel, 67

Guide Pratique de Mycologie Médicale, J. Coudert, 1043

Guinier, A., and G. Fournet, *Small-Angle Scattering of X-rays*, 591

H

Haas, J., *Physiologie der Zelle*, 994

Haddow, A. See Greenstein, J. P., 465

Hahn, R. B. See Welcher, F. J., 852

Haisinsky, M., Ed., *Actions Chimiques et Biologiques des Radiations*, 679

Handbook of Vital Statistics Methods, Series F, No. 7, Statistical Office of the United Nations, 747

Harmonic Analysis and the Theory of Probability, S. Bochner, 511

Harris, R. S., G. F. Marrian, K. V. Thimann, Eds., *Vitamins and Hormones*, vol. XIII, 230

Harvey, H. W., *The Chemistry and Fertility of Sea Waters*, 67

Hawes, I. L., compiler, *Index XIII to the Literature of American Economic Entomology*, 1953, 146

Helpern, M. See Gonzales, T. A., 107

Hensel, H. See Precht, H., 805

Hill, R., and C. P. Whittingham, *Photosynthesis*, 107

Hill, W. C. O., *Primates: Comparative Anatomy and Taxonomy*, vol. 2, 944

Hirschman, I. I., and D. V. Widder, *The Convolution Transform*, 512

History of the Telescope, The, H. C. King, 109

Hodgson, W. C. See Locke, A. S., 734

Hoff, E. C., *Preventive Medicine in World War II*, vol. III, 946

Hoffmann, A., *Faune de France. Coleopteres Curculionides*, 898

Hofstadter, R., and W. Metzger, *The Development of Academic Freedom in the United States*, 726

Holthuis, L. B., *The Recent Genera of the Caridean and Stenopodidean Shrimps (Class Crustacea, Order Decapoda, Supersection Natantia) with Keys for Their Determination*, 744

Holzbock, W. G., *Instruments for Measurement and Control*, 511

Hormones, The, vol. III, G. Pincus and K. V. Thimann, Eds., 231

Horowitz, W., Ed., H. J. Fisher, A. H. Robertson, H. Reynolds, *Official Methods of Analysis of the Association of Official Agricultural Chemists*, 945

Hoyle, F., *Frontiers of Astronomy*, 512

Hunter, D., *The Diseases of Occupation*, 510

Hyman, L. H., *Echinodermata*, vol. IV, 592

I

Imagination's Other Place, H. Plotz, 730

Immunology and Serology, P. L. Carpenter, 738

Income of the American People, H. P. Miller, 421

Index XIII to the Literature of American Economic Entomology, 1953, I. L. Hawes, compiler, 146

Industrial and Manufacturing Chemistry, G. Martin, 677

Information Theory in Psychology, H. Quastler, Ed., 747

Insley, H., and V. D. Fréchette, *Microscopy of Ceramics and Cements*, 231

Instruments for Measurement and Control, W. G. Holzbock, 511

International Poliomyelitis Congress, *Poliomyelitis*, 806

International Review of Cytology, vol. IV, G. H. Bourne and J. F. Danielli, Eds., 995

Interpretation of Dreams, The, S. Freud, 510

Introduction to Reactor Physics, An, D. J. Littler and J. F. Raffle, 734

ISCC-NBS Method of Designating Colors and a Dictionary of Color Names, The, National Bureau of Standards, 678

J

Jay, K. E. B., *Atomic Energy Research at Harwell*, 381

Johnson, W., Ed., *Stuttering in Children and Adults*, 145

Jones, I. C., and P. Eckstein, Eds., *Comparative Endocrinology of Vertebrates*, pt. I, *Comparative Physiology of Reproduction and the Effects of Sex Hormones in Vertebrates*, 1042

Jones, I. C., and P. Eckstein, Eds., *Comparative Endocrinology of Vertebrates*, pt. II, *The Hormonal Control of Water and Salt-Electrolyte Metabolism in Vertebrates*, 1182

Jungheer, E. L. See Brandly, C. A., 1042

K

Kabat, E. A., *Blood Group Substances*, 1041

Kaplan, N. O. See Colowick, S. P., 739

Kaufert, F. H., and W. C. Cummings, *Forestry and Related Research in North America*, 108

Kerze, F., Jr. See Lustman, B., 147

King, H. C., *The History of the Telescope*, 109

Kinships of Animals and Man, A. H. Morgan, 107

Kirillova, Z. A. See Giliarovskii, V. A., 851

Krebiozen: the Great Cancer Mystery, G. D. Stoddard, 108

Kuenen, P. H., *Realms of Water*, 1135

Kushner, D. S. See Popper, H., 187

L

Landsberg, H. E., Ed., *Advances in Geophysics*, vol. 2, 1085

Language, Thought, and Reality, J. B. Carroll, Ed., 730

Lauffer, M. A. See Smith, K. M., 739

Lee, R., *Electronic Transformers and Circuits*, 733

Lees, A. D., *The Physiology of Diapause in Arthropods*, 379

Lefevre, P. G., *Protoplasmatologia. Handbuch der Protoplasmaforschung*, vol. VIII, 1181

Legal Medicine. Pathology and Toxicology, T. A. Gonzales, M. Vance, M. Helpern, C. J. Umberger, 107

Lehrbuch und Atlas der Anatomie des Menschen, vol. I, *Allgemeines, Skeletsystem, Muskelsystem, Gefäßsystem*; vol.

II, *Eingeweide Nervensystem-Sinnesorgane*, Rauber-Kopsch, 945

Libby, W. F., *Radiocarbon Dating*, 679

Lisa, J. R. See Rosenblatt, M. B., 1043

Littler, D. J., and J. F. Raffle, *An Introduction to Reactor Physics*, 734

Liventsev, N. M. See Giliarovskii, V. A., 851

Locke, A. S., C. H. Dodge, S. F. George, L. F. Gilchrist, W. C. Hodgson, J. E. Meade, J. A. Sanderson, C. F. White, *Principles of Guided Missile Design*, 734

Louisiana Birds, G. H. Lowery, Jr., 1041

Lowery, G. H., Jr., *Louisiana Birds*, 1041

Ludwig Boltzmann, *Mensch, Physiker, Philosoph*, E. Broda, 732

Lustman, B., and F. Kerze, Jr., Eds., *The Metallurgy of Zirconium*, 147

M

MacIver, R. M., *Academic Freedom in Our Time*, 726

Magnetic Materials in the Electrical Industry, P. R. Bardell, 189

Mallette, F. S., Ed., *Problems and Control of Air Pollution*, 109

Mammalian Fetus: Physiological Aspects of Development, The, Cold Spring Harbor Symposia on Quantitative Biology, vol. XIX, 467

Mann, T., *The Biochemistry of Semen*, 637

Manske, R. H. F., Ed., *The Alkaloids, Chemistry and Physiology*, vol. V, 805

Marine and Fresh-Water Plankton, The, C. C. Davis, 852

Marrian, G. F. See Harris, R. S., 230

Martin, G., *Industrial and Manufacturing Chemistry*, 677

McElroy, W. D., and B. Glass, Eds., *A Symposium on Inorganic Nitrogen Metabolism: Function of Metallo-Flavoproteins*, 740

McIlwain, H., *Biochemistry and the Central Nervous System*, 737

McLean, F. C., and M. R. Urist, *Bone, an Introduction to the Physiology of Skeletal Tissue*, 740

McMorris, R. O. See Stacy, R. W., 1086

McQuillan, A. D., and M. K. McQuillan, *Titanium*, 1085

McQuillan, M. K. See McQuillan, A. D., 1085

Meade, J. E. See Locke, A. S., 734

Medical Research: a Midcentury Survey, vols. 1 and 2, American Foundation, 744

Mesons and Fields, vol. I, S. S. Schweber, H. A. Bethe, F. de Hoffman, 733

Mesons and Fields, vol. II, H. A. Bethe and F. de Hoffman, 66

Metallurgy of Zirconium, The, B. Lustman and F. Kerze, Jr., Eds., 147

Metcalf, R. L., *Organic Insecticides*, 420

Methods in Enzymology, vols. I and II, S. P. Colowick and N. O. Kaplan, 739

Metzger, W. See Hofstadter, R., 726

Michaelis, R. R., *Research Films in Biology, Anthropology, Psychology, and Medicine*, 549

Microscopy of Ceramics and Cements, H. Insley and V. D. Fréchette, 231

Midwest and Its Children, R. G. Barker and H. F. Wright, 420

Mighty Force of Research, The, Editors of *Fortune*, 728

Miles, A. A. See Wilson, G. S., 637

Miller, A. K., W. Youngquist, C. Collinson, *Ordovician Cephalopod Fauna of Baffin Island*, 550

Miller, H. P., *Income of the American People*, 421

Miser, H. J. See Andres, P. G., 551

Modern Physics, J. C. Slater, 805

Moorhouse, R. G. See Bellamy, E. H., 639

- Moos, M. *See* Bailey, S. K., 745
 Morgan, A. H., *Kinships of Animals and Man*, 107
 Muenscher, W. C., *Weeds*, 334
 Munroe, R. L., *Schools of Psychoanalytic Thought*, 334

N

- Nachod, F. C. *See* Braude, E. A., 188
 National Bureau of Standards, *The ISCC-NBS Method of Designating Colors and a Dictionary of Color Names*, 678
 Neugebauer, O., Ed., *Astronomical Cuneiform Texts*, vol. I, *Introduction: The Moon*; vol. II, *The Planets*; vol. III, *Plates*, 66
 Neurochemistry, K. A. C. Elliott, I. H. Page, J. H. Quastel, Eds., 511
 New Astronomy, *The*, Editors of *Scientific American*, 729
 Newman, J. R., Ed., *What is Science?* 729
 New Zealand Geomorphology, C. A. Cotton, 736
 Nuclear Radiation Detectors, J. Sharpe, 1181
 Nucleic Acids, *The: Chemistry and Biology*, vol. II, E. Chargaff and J. N. Davidson, Eds., 144

O

- O'Brien, T. D. *See* Sneed, M. C., 944
 Official Methods of Analysis of the Association of Official Agricultural Chemists, W. Horowitz, Ed., H. J. Fisher, A. H. Robertson, H. Reynolds, 945
 Oliver, D. L., *A Solomon Island Society*, 746
 Ordovician Cephalopod Fauna of Baffin Island, A. K. Miller, W. Youngquist, C. Collinson, 550
 Organic Insecticides, R. L. Metcalf, 420
 Origins of Resistance to Toxic Agents, M. G. Sevag, R. D. Reid, O. E. Reynolds, Eds., 146
 Oster, G., and A. W. Pollister, Eds., *Physical Techniques in Biological Research*, vol. I, *Optical Techniques*, 741

P

- Page, I. H. *See* Elliott, K. A. C., 511
 Petrographic Mineralogy, E. E. Wahlstrom, 110
 Pharmaceutical Press, *The Extra Pharmacopoeia*, vol. 2, 677
 Photosynthesis, R. Hill and C. P. Whittingham, 107
 Physical Chemistry, F. Daniels and R. A. Alberty, 737
 Physical Techniques in Biological Research, vol. I, G. Oster and A. W. Pollister, Eds., 741
 Physics and Chemistry of Life, *The*, Editors of *Scientific American*, 729
 Physics of Fibres, H. J. Woods, 853
 Physics and Microphysics, L. de Broglie, 550
 Physiologie der Zelle, J. Haas, 994
 Physiology of Diapause in Arthropods, *The*, A. D. Lees, 379
 Pincus, G., and K. V. Thimann, Eds., *The Hormones*, vol. III, 231
 Pincus, G., Ed., *Recent Progress in Hormone Research*, vol. XI, 231
 Plotz, H., *Imagination's Other Place*, 730
 Plummer, N. *See* Swineford, A., 851
 Poliomyelitis, International Poliomyelitis Congress, 806
 Pollister, A. W. *See* Oster, G., 741
 Popper, H., and D. S. Kushner, Eds., *Cardiovascular Renal Problems*, 187
 Precht, H., J. Christophersen, H. Hensel, *Temperatur und Leben*, 805
 Preventive Medicine in World War II, vol. III, E. C. Hoff, Ed., 946
 Primates: Comparative Anatomy and Taxonomy, vol. 2, W. C. O. Hill, 944

- Principles of Animal Virology*, F. M. Burnet, 145
Principles and Applications of Physics, O. Blüh and J. D. Elder, 549
Principles of Guided Missile Design, A. S. Locke, C. H. Dodge, S. F. George, L. F. Gilchrist, W. C. Hodgson, J. E. Meade, J. A. Sanderson, C. F. White, 734
Principles of Meteorological Analysis, W. J. Saucier, 187
Principles of Physical Metallurgy, M. C. Smith, 735
Principles and Problems in Energetics, J. N. Brønsted, 733
Problems and Control of Air Pollution, F. S. Mallette, Ed., 109
Proceedings of the 1954 Glasgow Conference on Nuclear and Meson Physics, E. H. Bellamy and R. G. Moorhouse, Eds., 639
Proceedings of the International Conference of Theoretical Physics, Kyoto and Tokyo, September 1953, Science Council of Japan, 512
Progress in the Chemistry of Organic Natural Products, vol. XII, L. Zechmeister, Ed., 898
Progress in Organic Chemistry, vol. 3, J. W. Cook, Ed., 945
Protein Malnutrition, J. C. Waterlow, Ed., 231
Protoplasmatologia. Handbuch der Protoplasmaforschung, vol. II, J. Small and F. J. Wiercinski, 1134
Protoplasmatologia. Handbuch der Protoplasmaforschung, vol. VIII, P. G. Lefevre, 1181
Psychology of Human Differences, The, L. E. Tyler, 1087

Q

- Quantum Mechanics*, L. I. Schiff, 187
 Quastel, J. H. *See* Elliott, K. A. C., 511
 Quastler, H., Ed., *Information Theory in Psychology*, 747

R

- Radiocarbon Dating, W. F. Libby, 679
 Raffle, J. F. *See* Littler, D. J., 734
 Rauber-Kopsch, *Lehrbuch und Atlas der Anatomie des Menschen*, vol. I, *Allgemeines, Skelettsystem, Muskelsystem, Gefäßsystem*; vol. II, *Eingeweide Nervensystem-Sinnesorgane*, 945
Realms of Water, P. H. Kuenen, 1135
Recent Genera of the Caridean and Stenopodidean Shrimps (Class Crustacea, Order Decapoda, Supersection Natantia) with Keys for Their Determination, The, L. B. Holthuis, 744
Recent Progress in Hormone Research, vol. XI, G. Pincus, Ed., 231
Reflections of a Physicist, P. W. Bridgman, 994
 Reid, R. D. *See* Sevag, M. G., 146
 Reingold, H. *See* Andres, P. G., 551
Relativity: the Special Theory, J. L. Synge, 732
Reports on Progress in Physics, vol. XVIII, A. C. Strickland, Ed., 335
Research Films in Biology, Anthropology, Psychology, and Medicine, A. R. R. Michaelis, 549
Research Frontiers in Politics and Government, S. K. Bailey, H. A. Simon, R. A. Dahl, R. C. Snyder, A. de Grazia, M. Moos, P. T. David, D. B. Truman, 745
 Reynolds, H. *See* Horowitz, W., 945
 Reynolds, O. E. *See* Sevag, M. G., 146
 Richardson, J. F. *See* Coulson, J. M., 737
 Riddle, O., *The Unleashing of Evolutionary Thought*, 144
 Robertson, A. H. *See* Horowitz, W., 945
 Rodgers, O. E. *See* Thompson, A. S., 1182

- Rosenblatt, M. B., and J. R. Lisa, *Cancer of the Lung*, 1043
 Rowley, D., Ed., *Arctic Research*, 900
 Royal Society, *Biographical Memoirs of Fellows of the Royal Society*, vol. 1, 730
 Rudnick, D., Ed., *Aspects of Synthesis and Order in Growth*, 380
 Russell, W. L., *Structural Geology for Petroleum Geologists*, 735

S

- Sanderson, J. A. *See* Locke, A. S., 734
 Saucier, W. J., *Principles of Meteorological Analysis*, 187
 Schiff, L. I., *Quantum Mechanics*, 187
 Schools of Psychoanalytic Thought, R. L. Munroe, 334
 Schweber, S. S., H. A. Bethe, F. de Hoffman, *Mesons and Fields*, vol. I, *Fields*, 733
Science in Action TV Library, The, vol. I, B. Draper, 380
Science and Christian Belief, C. A. Coulson, 731
 Science Council of Japan, *Proceedings of the International Conference of Theoretical Physics, Kyoto and Tokyo, September 1953*, 512
Scientific Books, Libraries and Collectors, J. L. Thornton and R. I. J. Tully, 731
 Scott, T. R., *Transistors and Other Crystal Valves*, 422
 Segal, Yu. E. *See* Giliarovskii, V. A., 851
Selbstgestaltung des Lebendigen, Die, K. Friederichs, 1135
Semimicro Qualitative Analysis, F. J. Welcher and R. B. Hahn, 852
 Sevag, M. G., R. D. Reid, O. E. Reynolds, Eds., *Origins of Resistance to Toxic Agents*, 146
 Sharpe, J., *Nuclear Radiation Detectors*, 1181
 Shils, E. A., *The Torment of Secrecy*, 1133
 Shipley, R. A. *See* Dorfman, R. I., 738
Shock and Circulatory Homeostasis, H. D. Green, Ed., 745
 Simon, H. A. *See* Bailey, S. K., 745
 Singh, J. *See* Covell, G., 110
 Sinnott, E. W., *The Biology of the Spirit*, 729
 Slater, J. C., *Modern Physics*, 805
Small-Angle Scattering of X-rays, A. Guinier and G. Fournet, 591
 Small, J., and F. J. Wiercinski, *Protoplasmatologia. Handbuch der Protoplasmaforschung*, vol. II, 1134
 Smith, K. M., and M. A. Lauffer, Eds., *Advances in Virus Research*, vol. III, 739
 Smith, M. C., *Principles of Physical Metallurgy*, 735
 Smith, R. F. *See* Steinhaus, E. A., 742
 Smyth, C. P., *Dielectric Behavior and Structure*, 899
 Sneed, M. C., and R. C. Brasted, Eds., H. M. Cyr and T. D. O'Brien, *Comprehensive Inorganic Chemistry*, vol. 4, 944
 Snyder, R. C. *See* Bailey, S. K., 745
 Society for Experimental Biology, *Symposia of the*, No. IX, *Fibrous Proteins and Their Biological Significance*, 899
Soil Warming by Electricity, R. H. Coombes, 379
Solar Energy Research, F. Daniels and J. A. Duffie, Eds., 188
Solomon Island Society, A, D. L. Oliver, 746
Soviet Academy of Sciences, The, A. Vucinich, 728
Soviet Professional Manpower, Its Education, Training, and Supply, N. DeWitt, 727
 Speranskaya, E. N., *Surgical Procedures on the Gastrointestinal Tract of Ani-*

- mals in Preparation for Chronic Experiments*, 335
 Sprague, G. F., Ed., *Corn and Corn Improvement*, vol. V, 380
 Stacy, R. W., D. T. Williams, R. E. Worden, R. O. McMorris, *Essentials of Biological and Medical Physics*, 1086
 Standing Committee on Combustion Symposia of the Combustion Institute, *Fifth Symposium (International) on Combustion*, 336
 Starck, D., *Embryologie*, 741
Static and Dynamic Electron Optics, P. A. Sturrock, 230
 Statistical Office of the United Nations, *Handbook of Vital Statistics Methods*, Series F, No. 7, *Studies in Methods*, 747
 Steel, F., *Grundlagen der Analytischen Chemie in Wässrigen Systemen*, 67
 Steinhaus, E. A., and R. F. Smith, Eds., *Annual Review of Entomology*, vol. 1, 742
 Stevenson, G. S., *Administrative Medicine*, 379
 Stoddard, G. D., *Krebiozen: the Great Cancer Mystery*, 108
Stratigraphic Geology, M. Gignoux, 1180
 Strickland, A. C., Ed., *Reports on Progress in Physics*, 335
Structural Geology for Petroleum Geologists, W. L. Russell, 735
 Sturrock, P. A., *Static and Dynamic Electron Optics*, 230
Stuttering in Children and Adults, W. Johnson, Ed., 145
Surgical Procedures on the Gastrointestinal Tract of Animals in Preparation for Chronic Experiments, E. N. Speranskaya, 335
 Swineford, A., and N. Plummer, Eds., *Clays and Clay Minerals*, 851
Symposium on Inorganic Nitrogen Metabolism: Function of Metallo-Flavoproteins, A. W. D. McElroy and B. Glass, Eds., 740
 Synge, J. L., *Relativity: the Special Theory*, 732
 Sz-Nagy, B. See Fiesz, F., 637

T

- Temperatur und Leben*, H. Precht, J. Christophersen, H. Hensel, 805
Thermal Power from Nuclear Reactors, A. S. Thompson and O. E. Rodgers, 1182
 Thimann, K. V. See Harris, R. S., 230, and Pincus, G., 231
 Thomas, W. L., Jr., Ed., *Yearbook of Anthropology*, 1955, 995
 Thompson, A. S., and O. E. Rodgers, *Thermal Power from Nuclear Reactors*, 1182
 Thornton, J. L., and R. I. J. Tully, *Scientific Books, Libraries and Collectors*, 731
 Tipson, R. S. See Wolfrom, M. L., 1134
Titanium, A. D. McQuillan and M. K. McQuillan, 1085
Topley and Wilson's Principles of Bacteriology and Immunity, 2 vols., G. S. Wilson and A. A. Miles, 637
Torment of Secrecy, The, E. A. Shils, 1133
Traité de Paléontologie, vol. V, *Amphibiens, Reptiles, Oiseaux*, 593
Traité de Zoologie, vol. XVII, *Mammifères*, parts 1 and 2, 743
Transistors and Other Crystal Valves, T. R. Scott, 422
 Trotman-Dickenson, A. F., *Gas Kinetics*, 638
 Truman, D. B. See Bailey, S. K., 745
 Tully, R. I. J. See Thornton, J. L., 731
 Tyler, L. E., *The Psychology of Human Differences*, 1087

U

- Umberger, C. J. See Gonzales, T. A., 107
Unleashing of Evolutionary Thought, The, O. Riddle, 144
 Urist, M. R. See McLean, F. C., 740
 U.S. Department of Agriculture, *Water*, 1085

V

- Vance, M. See Gonzales, T. A., 107
Vitamins and Hormones, vol. XIII, R. S. Harris, G. F. Marrian, K. V. Thimann, Eds., 230
 von Eickstedt, E. F., *Atom und Psyche*, 1135
 Vucinich, A., *The Soviet Academy of Sciences*, 728

W

- Waelsch, H., Ed., *Biochemistry of the Developing Nervous System*, 591
 Wahlstrom, E. E., *Petrographic Mineralogy*, 110
 Ward, K., Jr., Ed., *Chemistry and Chemical Technology of Cotton*, 109
 Water, U.S. Department of Agriculture, 1085
 Waterlow, J. C., Ed., *Protein Malnutrition*, 231
 Weeds, W. C. Muenscher, 334
 Welcher, F. J., and R. B. Hahn, *Semi-micro Qualitative Analysis*, 852
 Westerfeld, W. W., Ed., *Biochemical Preparations*, vol. 4, 852
What is Science? J. R. Newman, Ed., 729
 White, C. F. See Locke, A. S., 734
 Whittingham, C. P. See Hill, R., 107
 Widder, D. V. See Hirschman, I. I., 512
 Wiercinski, F. J. See Small, J., 1134
 Williams, D. T. See Stacy, R. W., 1086
 Wilson, G. S., and A. A. Miles, *Topley and Wilson's Principles of Bacteriology and Immunity*, 2 vols., 637
 Wolfrom, M. L., and R. S. Tipson, Eds., *Advances in Carbohydrate Chemistry*, vol. 10, 1134
 Woods, H. J., *Physics of Fibres*, 853
 Worden, R. E. See Stacy, R. W., 1086
 Wright, H. F. See Barker, R. G., 420

Y

- Yearbook of Anthropology*, 1955, vol. I, W. L. Thomas, Jr., Ed., 995
 Youngquist, W. See Miller, A. K., 550

Z

- Zechmeister, L., Ed., *Progress in the Chemistry of Organic Natural Products*, vol. XII, 898

Analytic Subject Index

A

- AAAS, and academy grants for student research, 834; -Anne Frankel Rosenthal memorial award for cancer research, 20; announcements of 1956 meeting of, 624, 947, 1166; constitution and bylaws of, 263; council meeting of, 1955; and dissemination of science news, 707; editor of journals of, 833; editorial policies of, 714; and junior academies of science, 976; membership of, 272; new affiliate of, 134; new associate society, 178, 881; new headquarters for, 318; Newcomb Cleveland prize of, 54; officers, committees, and representatives of, 266, 271; and principles in making research grants, 651; reports of Atlanta meeting of, 273, 279, 514; and resolution on funds for foreign travel by scientists, 125; Science Teaching Improvement Program of, 258, 624, 880, 919, 1166; socio-psychological prize of, 538, 976;

- Southwestern and Rocky Mountain Division of, 553, 1184; Theobald Smith award of, 717, 1167
 Absorption spectrum, of monazite, 888; photoinduced changes in *Chlorella*, 462
 Abstracting, biological, 337, 578; scientific, 423
 Academies of science, junior, 976; state, and grants for student research, 834
 Acetazoleamide, anticonvulsant action of, 224
 Acetyl- β -methylcholine chloride (Mechoyl), as substrate in cholinesterase activity determination, 987
 Acetyl pyridine analogs, and use in tri- and diphosphopyridine nucleotides in flavoprotein catalyzed reactions, 844
 Acetylation, effect of barbiturates on, 332
Achatina fulica, disease in, 1130
 Acheson, E. G., centennial of, 319
Achras sapota, lactose in, 1083
 Acidosis, 223
 Acoustics, establishment of international committee on biological, 1088
 Acrasin, fractionation of, 1171; properties of, 1172
 Acromegaly, phospholipid metabolism in, 1084
 ACTH, effect of reserpine on secretion of, 418; and growth hormone, 617; and inflammation, 531
 Activity, techniques for measuring monkey, 1170
 Adams, C. C., obituary, 974
 Adenosine triphosphate (ATP), and muscle contraction, 632
 Adhesion, of spirochete of syphilis, 989
 Adrenal cortex, and parotid secretion of sodium-depleted sheep, 986
 Adrenal-cortical extract, and effect on aerobic phosphorylation, 797
 Adrenotropic tumor, obesity induced by, 184
 AD-X2, 1099
Aedes aegypti, role of diet in egg development by, 890
 Aeronautics, research on nosewheel shimmy, 452
 Age, potassium-argon method of determining, 938; and relation to productivity, 724; of rocks, 871
 Agriculture, antibiotics in, 30; use of rodenticide in, 61
Ailanthus, and fossil plants, 1025
 Air Force Office of Scientific Research, new headquarters for, 1167
 Air pollution, study of, 319, 667, 934; annotated bibliography on, 790; and cancer, 450
 Airplane, atomic engine for, 367; causes of nosewheel shimmy in, 452
 Alaska, recession of shoreline of, 367
 Aldosterone, 325
 Algae, reversible bleaching of chlorophyll in, 795; and use of solar energy, 830
 Alimentary tract, and polio virus, 1152
 Alkali atom, interaction constants of, 208
 Alkaloid, *Rauwolfia*, 992
 Alkalosis, 223
 Alleles, 927
Allescheria boydii, 878
Alstonia constricta, as new source of reserpine, 452
Ambrosia, spiral male nuclei in, 633
 Ameba, in experiments to explore nuclear-cytoplasmic interrelationships, 150
 American Association of Physical Anthropologists, 25th anniversary of, 234
 American Astronomical Society, 452
 American Cancer Society, program grants by, 525
 American Foundation, and study of support of research, 353
 American Heart Association, 931
 American Institute of Chemical Engineers, meeting of, 470, 953

- American Journal of Digestive Diseases*, the, new publishers of, 414
 American Medical Education Foundation, 318
 American Museum of Natural History, southwestern research station of, 980
 American Physiological Society, report of, 1045
 Amethopterin, influence of concentration of leukemic inoculum on effectiveness of, 840
 Amino acids, in bovine semen, 224; as requirement in adult mosquitoes, 890; and relation to excretory pattern of schizophrenics, 1078; in trail of sulfur research from insulin to oxytocin, 967
 4-Aminopyrazolo(3,4-d)pyrimidine (4APP), tissue-culture studies on, 848
 Ammonia, and crosslinking of latex rubber, 1123
 Amniotic fluid, in prenatal diagnosis of sex, 542, 548
 Amylase, in rat saliva, 841
 Anaerobiosis, postirradiation, 139
 Analogy, mathematical, of biological response curves and electron and proton transfers, 1017
 Anatomy, nomenclature in, 884; peculiarities in human and other primate, 366
 Anesthetics, detoxification of steroid, 940
 Animal, new laboratory, 790
 Annual Reviews, Inc., new headquarters of, 259
Anopheles quadrimaculatus, role of diet in egg development by, 890
 Anthropology, 259, 327, 925; blood groups in physical, 927; of early man in the Americas, 1064; of giant primate in Tibet, 1024; of Iroquois Indians, 69; of legendary Thai tribe, 880; of Pleistocene primates, 55; of pygmies in New Guinea, 977; and serum protein concentrations in North American Negroid, 991; and suprasternal ossicles, 366
 Anthropometry, in Poland, 20
 Antibiotics, in agriculture, 30; and systemic activity of derivatives of actidione against cherry leaf-spot fungus, 1175
 Antibodies, for Carré's virus, 586
 Antigen, in rabbits, 935
 Antigenicity, of gelatin and polytyrosyl-gelatin, 1129
 Antineoplastic compounds, in cancer therapy studies, 848
 Antiproton, size of, 318
 Antiserums, to identify virus diseases of cereal crops, 367
 Apparatus, for airborne radioactive materials, 211; for analysis of water vapor, 453; for astronomical work, 452; for injection of mosquitoes, 228; for intracellular recording from moving tissues, 100; for marine weather station, 717; for mass determinations of microscopic particles, 1176; for measuring edge waves on the continental shelf, 127; for measuring monkey activity, 1170; for measuring very small quantities of heat, 881; for photographic mapping, 790; for preserving radioactivity standards, 895; for recognizing cerium earth minerals, 888; for seeing in the dark, 410; for studying action of heart, 20
 Apple, absence of indoleacetic acid in, 225
 Archeology, and chronology of last glaciation, 355; of Iroquois Indians, 69; and radiocarbon dates, 446; recent finds in, 1111
 Archibald, R. C., obituary, 622
 Arctic Institute of North America, waterfowl research project of, 881
 Arey, L. B., retired, 929
 Argon, production of, 452
 Arid zone, UNESCO aid to research in, 537
 Arizona Academy of Science, organization of, 997
 Armed Forces Medical Library, 869
 Aromatic metabolism, in schizophrenia, 1029
Ascaris, in studies of x-ray effects on pro-nuclear fusion, 139
 Ascending impulses, in pyramidal tract, 895
 Ascites cancer cells, 309
 Assay, microbiological, for determining vitamin B₁₂, 1071
 Assay curves, 1017
 Association for Applied Solar Energy, journal of, 541, 629
 Association of Southeastern Biologists, report of, 1046
 Astronomy, apparatus for, 452; contributions of R. W. Marriot to, 536; heavens mapped according to radio waves, 626; hydrogen emissions from distant galaxies, 880; measurement of the red shift, 133; observatory in Southern Hemisphere, 577; radio waves from Jupiter, 452; signals from Venus, 1111; status of Pluto, 896
 Atmosphere, radioactive materials in, 1120; tracing pollutants in, 451
 Atom, hyperfine structure of, 208
 Atomic arms, race for, 921
 Atomic beams, 207
 Atomic energy, electricity from, 322; international agency for, 788; metallurgical problems of, 667; peaceful uses of, 595; plans in various countries for use of, 625
 Atomic structure, code for describing, 790
 Atomic unit of time, 571
 Audiofrequency wave phenomena, study of during IGY, 788
 Audiogenic seizure, inhibition of, 223
 Australopithecine, 55
 Autoradiography, color, 333; of radiosulfate in inner ear, 1074
 Auxin, in plants, 225
 Avogadro, A., 1088
- B**
- Bacillus megaterium*, metabolic events during synchronized growth of, 1036
Bacillus megatherium, in studies of protein synthesis, 149
Bacillus subtilis, replica technique for spores of, 983
 Bacteria, metabolic events during synchronized growth of, 1036; recombination in, 897; in study of "heat-activated enzymes," 50; and sulfate reduction, 1124
 Bacterial viruses, molecular bases of parasitism of, 653
 Bacteriology, report of recent work in, 1137
 Bacteriophage, parasitism in T-even, 653; urea activation of, 891
Bacterium tularensis, and infectivity to mice, 943
 Barbiturates, and effect on acetylation, 332
 Basilar membrane, vibrations of, 779
 Bat, virus of, 227
 Battery additive, 1099
 Bayer 21/199, for control of housefly, 1173
 Beams, atomic and molecular, 207
 Behavior, acoustic, of animals, 1088; of African honey-guides, 55; assessment of drug effects on emotional, 1033; in cats conditioned to an auditory stimulus, 376; conditioned, in pigeons, 936; effects of pentobarbital sodium on, 371; effect of reserpine on, 1116; effect of sensory deprivation on learning rate, 1074; and modification of electric activity in cochlear nucleus of unanesthetized cats, 331; techniques for measuring monkey, 1170; "whirling," in dogs, 939
 Behavioral sciences, center for advanced study in, 405
 Benadryl. *See* Diphenhydramine
 Benthic communities, distribution of, in association with kelp beds, 183
 Berne conference on 50 years of relativity, 492
Betta splendens (Siamese fighting fish), effect of ergot drugs on, 25
 Bibliography, on air pollution, 790; of drug effects on cardiovascular system, 723
 Bifidus factor, in human milk, 932
 Bile acids, in human blood serum, 892
 Binder, peat as, 1025
 Biochemical products, standards for quality of, 54
 Biogeography, and evidence for climate and life zones during Wisconsin period, 172
 Biological Abstracts, 337
 Biological activity, and relationship with organic chemical structure, 967
 Biological response curves, 1017
 Biological substances, magnetic measurements of, 499
 Biological systems, indexing effects of chemical compounds on, 723
 Biology colloquium at Oregon State College, report of, 854
 Biology, committee on mathematical, 725; conference on international exchange of information on animal sounds, 1088; contributions of R. W. Miner to marine, 879; effects of atomic radiation on, 1110; principles for abstracting literature of, 578
 Bioluminescence, of firefly and *Cypridina*, 150
 Bird, behavior of, 55; lipid levels in migrating, 892; recording of voices of, 718
 Birth frequency, statistical analysis of, by hour of day, 985
 Bison [*Bison (Bison) occidentalis*], fossil, 327
 Black, A. P., retired, 930
 Black rot (*Ceratostomella fimbriata*), and effect on protein synthesis in sweetpotato, 1075
 Blair, F. W., retired, 320
Blatta orientalis, tergal and cercal secretion in, 798
 Bleeding, effect of serotonin on, 834
 Blood, and action of cobra venom, 631; chenodeoxycholic acid in serum of human, 892; clot-retraction promoting factor in, 796; concentrations of serum protein of, 991; effect of phenothiazine drugs on ion transport of, 940; enzymes of, 1122; interference of clotting in, 1118; iron in, 88; and irradiation experiments with rabbit, 1080; and magnetic techniques for *in vitro* isolation of leucocytes, 185; new clotting factor in human, 367; new hemoglobin J of, 889; report of symposium on, 152; serotonin in, 834
 Blood cholesterol, in male in basal and nonbasal states, 28
 Blood factor, Diego, in Venezuela, 927
 Blood groups, effect on natural selection of human, 840; Japanese studies on, 825; in physical anthropology, 927; in the rabbit, 935; in Venezuelan Indians, 633
 Body composition, in obesity induced by adrenotropic tumor, 184
 Bohr magneton, 208
 Book reviews, for *Science*, 716
 Books, and reading habits, 703
 Boss, B., retired, 1113
 Botany, contributions of E. D. Merrill to, 831
 Bovine semen, use of glycine in, 224

Bowman, K. M., retired, 1113
 Bretschger, M. E., retired, 979
 British Atomic Energy Authority, 1068
Brochymena annulata (Fabricius), 670
 Brookhaven National Laboratory, medical center at, 95; report of symposium on mutation at, 233
 Brown, R., retired, 540
 Bryan, W. L., obituary, 214
 Bufotenine, effects on human being of intravenous injection of, 886
Bulletin of the Atomic Scientists, tenth anniversary of, 217
 Bulls, semen of dairy, 224
 BZ 55, hypoglycemic action of, 885

C

- Calendar reform, 25, 544, 717
 Calorimeter, for measuring very small quantities of heat, 881
 Calorimetry conference at University of Minnesota, 552
 Camera, undersea, 366
 Canada, chemical institute of, 468; clinic for sex deviates in, 977; Pre-Cambrian geology of, 938
 Cancer, AAAS-Rosenthal award for research in, 20; chemotherapy of, in tissue culture, 848; control of, in mice, 539; inositol requirement of cells of, 845; and iodine-131 therapy, 800; origin of cells of, 309; in relation to smoking and air pollution, 450; research programs on, 525; search for drugs to treat, 790; studies on hydrogenated derivatives of carcinogens, 102; survival statistics of persons with, 1167; and tobacco, 226; treatment of Harding-Passey mouse melanoma type of, 984
Candida albicans, as a human pathogenic fungus in soil, 878
 Capillary permeability, and inflammation, 527
 Carbon chain, lengthening of, in sugars, 1177
 Carbon clock, 573
 Carbon dioxide, and inhibition of audiogenic seizures, 223
 Carbowax, precipitation of enzymes during isolation of chloroplasts in, 1032
Carcinides maenas, and redistribution of quahogs, 992
 Carcinogen, inhibiting effect of hydrogenated derivatives on, 102
 Carcinogenic doses and cocarcinogens, 588
 Carcinoid, malignant, studies on tryptophan and serotonin in patients with, 669
Career Opportunities in Biology, 321
 Carlsbad Caverns National Park, Chinese Walls of New Cave, 937
 Carnegie Institution of Washington, and conference on theoretical geophysics, 289
 Carotene, increased production of, 141
 Carré's virus, complement-fixing antibodies for, 586
 Cartography, international cooperation on, 717
 Cassiopeia A, 133
 Cat, in experiments with ascending impulses in pyramidal tract, 895; in experiments on electrocortical activity, 804; in learning experiments, 376; modification of electric activity in cochlear nucleus of, 331
 Catalase, insoluble active derivative of, 1076
 Catalysis, stepwise reaction via intermediates in, 887
 Catfish, Indian [*Heteropneustes (Sac-cobranthus) fossilis* (Bloch)], induced spawning in, 1080
 Cathepsin, in tumor-bearing rat tissues, 1082
 Cattle, radioiodine in thyroid glands of, 982; study of thyroidal iodine metabolism in, 26
 Cave system, Flint Ridge, 20
 Celestial motions, in determining standards of time, 568
 Cell, model for study of metabolism of, 1076; origin of cancer, 309; sensitivity to radiation of, 1020; staining and counting of mast, 941. *See also* Cytology
 Center for Advanced Study in the Behavioral Sciences, 405
 Central Index of Educational Exchangees, 883
 Central nervous system, enhancement by diphenhydramine of pentobarbital and strychnine effects on, 1170; and polio virus, 1151, 1154; and tranquilizing drugs, 992
Ceratostomella fimbriata, and effect on protein synthesis in sweetpotato, 1075
 Cereal crops, identification of virus diseases of, 367
 Cerium earth minerals, method for recognizing, 888
 Ceylon, diseases of snails in, 1130
 Chardin, P. T. de, obituary, 92
 Charge transfer spectra, 400
 Charles, D. R., obituary, 787
 Charlton, E. E., retired, 180
 Chelating agents, and inhibition of *Clostridium perfringens* toxin, 1077
Chemical Abstracts, new building for, 1112
 Chemical bond, electronic theory of, 255
 Chemical Institute of Canada, biochemistry division of, 468
 Chemical potential energy, conversion of solar energy into, 399
 Chemical structure, and relationship with biological activity, 967
 Chemistry, contributions of G. Edgar to industrial, 365; contributions of G. A. Hulett to, 93; industrial, 930; structure theory of, 255
 Chemists, survey of, 789
 Chemotaxis, acrasin as an agent of, 1171
 Chenodeoxycholic acid, in human blood serum, 892
 Cherry, systemic control of leaf-spot disease in, 1175
 Chicken, in detecting antibodies for Carré's virus, 586; in inhibition of virus-induced Rous sarcoma, 1073; in study of influenza-virus activity, 932
 Chimpanzee, and polio virus, 1152
Chlorella, photosynthetic luminescence and photoinduced absorption changes in, 462; reversible bleaching of chlorophyll in, 795; and use of solar energy, 830
 α -Chloro-*N,N*-diallylacetamide (CDAA), herbicidal action of, 847
 Chlorogenic acid, inhibition of enzymatic browning of, 1174
 Chlorophyll, reversible bleaching of, 795
 Chloroplast, precipitation of enzymes during isolation of, 1032
 Chlorosis, produced by fluorine on citrus, 933
 Chlorotetracycline, biosynthesis of, 1030
 Chlorotetracycline- C^{14} , preparation of, 1030
 Chlorpromazine, and antagonism to serotonin, 24; and release of serotonin, 993
Choanephora cucurbitarum, production of carotene by, 141
 Cholesterol, in men in basal and nonbasal states, 28
 Cholinesterase, human leucocytes and activity of, 987
 Cholyl coA, enzymatic synthesis of, 377
 Chromatograms, of urine of schizophrenic patients, 1078
 Chromatography, and application to taxonomic studies, 143; aromatic metabolites in schizophrenic, 1029; of chlorogenic acid addition products, 1174; in experiments with production of carotene, 141; identification of radioisotopes in, 333; reagent for differentiation of glucosaccharides in, 543; for separation of diastereoisomers, 842; use in determining phosphorylated intermediates, 545
 Chromosomal polymorphism, in *Drosophila robusta*, 630
 Cigarette smoke, temperature of, 226
 Citation indexes for science, 61
 Citrus trees, effect of fluorine on, 933
 Civil Service, salaries of scientists in, 976
 Clam, population redistribution of, 992
 Climate, origin of glacial, 1061; Pleistocene, 1118; during Wisconsin period, 167
 Climatic optimum, 1083
Clostridium perfringens, inhibition of toxin of, 1077
 Clot-retraction promoting factor, 796
 Clotting, new theory of interference in blood, 1118
 Cobalt, reabsorption of radioactive, 65
 Cobra, effect on blood cells of venom of, 631
Coccomyces hiemalis, derivatives of actidione for systemic control of, 1175
 Cochlea, electric activity in nucleus of, 331; mechanical models of, 782
 Cockroach, occurrence of 2-hexenal in, 670; tergal and cercal secretion in, 798
 Coding, punched-card, for library searches, 722
 Coesite, creation of, 20
 Coffinite, synthesis of, 105
 Cohen, S. S., winner of Newcomb Cleveland prize, 54
Coleus, effect of *Malus auxin* 2 on, 225
 Color test, in determining indoleacetic acid, 225; for thiols and thioesters, 981
 Colorado Plateau, new vanadium mineral from, 990
 Committee on Genetic Effects of Atomic Radiation, report of, 1157
 Communication, and citation indexes for science literature, 61; and documentation center for literature on atomic energy and radioactive isotopes, 94; and ESP, 12; and foreign visitors' seminars, 485; and principles for biological abstracting, 578; problems of, 397; and report of abstracting board of International Council of Scientific Unions, 423; and reporting of science news, 707; restriction of, 615; and secrecy, 785
 Complexes, bonding in the molecular addition, 1121; Cu(II)-peat, 330; urea, 897
 Computing center, establishment of, 320
 Connective tissue, and malignant variant, 502
 Conservation, state programs in, 790
 Continental shelf, edge waves on, 127
 Conversion process, electric, 829; photochemical, 830; thermal, 827
 Cooker, solar, 828
 Copper, as antiviral substance, 932; fluorides of, 459
 Copper nitrate, solubility of, 1121
 Coregonid, nitrogen in swimbladder of, 59
 Cork virus, separated parenchyma cells in, 1034
 Corn, hybrid, in U.S.S.R., 721
 Cortical mechanism, effects of LSD-25 on, 804
 Corticospinal tract, ascending impulses in, 895
 Cortisone, and treatment of diabetes, 417
 Cosmic rays, activity of, 452; colloquium on, 997

- Cosmic spherules, in deep-sea sediments, 450
- Cosmology, and relativity, 491
- Cosmos, evolution and structure of, 880
- Council of American Bioanalysts, as new AAAS associate, 178
- Council for International Organizations of Medical Sciences, report of, 112, 337
- Coxsackie virus, purification and crystallization of, 1037
- Crab, and redistribution of quahogs, 992
- Crassotrea virginica*, 1119
- Crosslinking, of latex rubber, 1123
- Cryptococcus neoformans*, as a human pathogenic fungus in soil, 878
- Crystal, growth of, on metal surfaces, 1165; x-radiation of, 370
- Crystal structure, of turnip yellows virus protein, 849
- Currency, decimal, for India, 217
- Cygnus A, 133
- Cypridina*, bioluminescence of, 150
- Cysteinamine, as protective agent against ionizing radiations, 28
- Cysteine, as inhibitor of browning, 1174
- Cystine, isolation of, from insulin, 967
- Cytochrome-c reductase, sulfhydryl nature of tri- and diphosphopyridine nucleotide-linked, 844
- Cytogenetics, of sex in *Gibberella cyano-gena*, 850
- Cytologia*, 825
- Cytology, distinguishing intact cells from free nuclei, 24; genetics and plant, 825; radiation studies in, 139; and significance of "heat-activated" enzymes, 50; and study of enzymes as biological units, 149; studies of sensitivity to radiation, 1020; symposia on, 1184
- Cytoplasm, sensitivity to radiation of, 1020
- D**
- Dagger (†), use of in scientific writing, 723
- DDD, and effect on plasma steroids, 140
- Decimals, for India, 217
- Dehydrogenase, activity of, in myocardial infarction, 1122
- Demerol, 26
- Dental caries, and oral phosphatase levels, 325; sodium-N-lauroyl sarcosinate in control of, 988
- Dentistry, register of students in, 368
- Desoxyribonucleic acid (DNA), quantitative infrared spectroscopy of, 328; in studies of molecular bases of parasitism of viruses, 653
- Desulfovibrio desulfuricans* in salt domes, 1124
- Detoxification, of steroid anesthetics, 940
- Dextran, use of, in separation of leucocytes, 987
- Dextrose, in formation of product toxic to *Phytophthora fragariae*, 509
- Diabetes, and inflammation, 530; oral insulinlike agent for, 258; treatment of, 417, 583, 584, 585
- Diamond, synthetic, to Smithsonian Institution, 884
- Diazinon, for control of housefly, 1173
- 2,4-Dichlorophenoxyacetic acid, for induction of histological changes in soybean roots, 1129
- Diego blood factor, in Venezuela, 927
- Diet, and egg development by mosquitoes, 890; iron in, 87; sterile, by means of ethylene oxide, 229
- Diethylaminoethanol (DEAE), as chemical model of drug action, 100
- Differentiation in plants, 590
- Diffusion, of gas through icebergs, 104
- Diphenhydramine (Benadryl), and effect on central nervous system, 1170
- Diphosphopyridine nucleotide (DPN), and enzymatic block in galactosemia, 635
- Dirac equation, 207
- Directory, of chairmen of departments of mathematics, 23; of dental students, 368; of educational exchangees, 883; of industrial research laboratories, 1028; of scientific and technical personnel, 882
- Documentation, scientific, 423; symposium on, 598; by U. S. Atomic Energy Commission, 366
- Dog, cooling of body temperature of, 1128; effects of bufotenine on, 886; effect of reserpine on secretion of ACTH in, 418; elastase production in pancreas of, 669; reabsorption of Co⁶⁰ from urine and bile samples of, 65; in studies of effect of DDD, 140; in testing an oral insulinlike agent, 584; use of 2-methyl hydrocortisones in, 325; whirling behavior in, 938
- Dose-response curves, 1017
- Dowex-1 resin, and use in determining phosphorylated intermediates, 545
- Drilling mechanism, in gastropods, 1126
- Drops, effect of vapor pressure on size of sessile, 935
- Drosophila* genetics, 233, 824
- Drosophila melangaster*, in population-genetic studies with paper chromatography, 143
- Drosophila robusta*, 630
- Drug action, chemical model of, 100; in terms of enzyme inhibition, 151
- Drugs, and effects on emotional behavior, 1033; indexing of biological responses to cardiovascular, 723
- Dunn, E. R., obituary, 975
- DuShane, G., 833
- Duttonite, 990
- E**
- Ear, composition of membranes of inner, 1074; and theories of hearing, 778
- Earth, measurements on size and shape of, 881
- Earth satellites, 411, 681
- Earthworm, basis for after-discharge in giant axon of, 803; latent learning in, 222
- Ecology, contributions of C. C. Adams to, 974; ecosystem as the basic unit in, 1127; of Great Bahama Bank, 1025; of human pathogenic fungi, 876; marine, 992
- Ecosystem, as the basic unit in ecology, 1127
- Ecuador, ivory-nut palm from late Tertiary of, 1131
- Edgar, G., obituary, 365
- Edge waves, on the continental shelf, 127
- Education, at Center for Advanced Study in the Behavioral Sciences, 405; contribution of W. L. Bryan to, 214; courses for high-school science and mathematics teachers, 1166; directory of American and foreign exchangees, 883; establishment of committee on beyond high school, 662; funds for medical, 318, 1112; survey of graduate credits for special science and mathematics, 919; in Great Britain, 882; and molecular engineering, 315; need for emphasis on mathematics, 965; NSF institutes for teachers, 177; proposed changes for future, 710; recruitment of teachers, 85; scholarship programs, 942; secondary-school enrollment survey, 880; report on technical, 928
- Egg development, role of diet in mosquito, 890
- Egloff, G., obituary, 832
- Einstein, A., life and work of, 486
- Elastin, 669
- Election of officers: AAAS, Southeast Branch, Alaska Division, 113; AAAS Southwestern and Rocky Mountain Division, 152, 1187; Academy Conference, 290; Alabama Academy of Science, 1089; Alaskan Science Conference, 426; Alpha Epsilon Delta, 1048; American Academy of Arts and Sciences, 998; American Association of Anatomists, 998; American Association of Clinical Chemists, 1187; American Association of Pathologists and Bacteriologists, 1187; American Association of Physical Anthropologists, 998; American Association of Scientific Workers, 600; American Board of Clinical Chemistry, 1089; American Chemical Society, 153; American College of Apothecaries, 1048; American College of Dentists, 70; American Eugenics Society, 234; American Geophysical Union, 1048; American Institute of Chemical Engineers, 338; American Institute of Chemists, 1048; American Institute of Electrical Engineers, 1048; American Institute of Nutrition, 855; American Medical Writers' Association, 338; American Meteorological Society, 384; American Microscopical Society, 153; American Nature Study Society, 290; American Phytopathological Society, 290; American Psychosomatic Society, 807; American Society for Artificial Internal Organs, 901; American Society for Experimental Pathology, 1187; American Society of Human Genetics, 290; American Society of Limnology and Oceanography, 290; American Society of Parasitologists, 289; American Society of Photogrammetry, 807; American Society for the Study of Arteriosclerosis, 234; American Society of Zoologists, 290; American Society of Zoologists, 426; Association of American State Geologists, 1048; Association for Applied Solar Energy, 600; Association of Research Directors, 1187; Association for Research in Nervous and Mental Disease, 426; Association of Southeastern Biologists, 1048; Association of Technical Writers and Editors, Washington, D.C., chapter, 32; Council of the American Association of Physics Teachers, 600; Ecological Society of America, 113; Econometric Society, 290; Electron Microscope Society of America, 384; European Organization for Nuclear Research (CERN), 234; Federation of American Scientists, 901; Federation of American Societies for Experimental Biology, 855; Gamma Alpha Graduate Scientific Fraternity, 1048; Genetics Society of Canada, 600; Hawaiian Academy of Science, 998; Illinois State Academy of Science, 1187; Indian Society of Genetics and Plant Breeding, 234; Indiana Academy of Science, 384; Institute of Mathematical Statistics, 290; Institute of Radio Engineers, 338; Interamerican Society of Psychology, 338; International Association for Dental Research, 901; International Institute of Embryology, 234; Iowa Academy of Science, 998; Kansas Academy of Science, 998; Kentucky Academy of Science, 113; Kresge-Hooker Science Library Associates, 70; Louisiana Academy of Sciences and the New Orleans Academy of Sciences, 998; Minnesota Academy of Science, 1089; Mississippi Valley Medical Society, 384; National Association of Biology Teachers, 234; National Association for Research in Science Teaching, 1048; National Speleological Society, 901; Nebraska Academy of Sciences, 384; New Mexico Academy of Science, 70; New York Academy of Sciences, 113; North Dakota Academy of Science,

- 998; Ohio Academy of Science, 1048; Oklahoma Academy of Science, 290; Optical Society of America, 70; Pennsylvania Academy of Science, 807; Phi Tau Sigma, 113; Poultry Science Association, 153; Scientific Apparatus Makers Association, 855; Scientific Manpower Commission, 681; Sigma Delta Epsilon, 113; Society for Experimental Stress Analysis, 70; Society for the Scientific Study of Religion, 153; Society for the Study of Evolution, 426; Society of American Foresters, 113; Society of Rheology, 113; Society of Rheology, 600; Society of Systematic Zoology, 290; Soil Conservation Society of America, 70; Tennessee Academy of Science, 807; Torrey Botanical Club, 338; University of Pittsburgh Association of Geology Teachers, 681; U.S. National Committee for the International Geophysical Year, 136; Western Society of Naturalists, 234; Wildlife Society, 681
- Electricity, Franklin's experiments and observations in, 47
- Electron, magnetic moment of, 439; multiplication of, in transmission photomultiplier tube, 663; properties of, 207
- Electron transfer spectra, 400
- Electron transport, mechanisms of, 844; analogy of biological response curves to, 1017; physiology of, 150
- Electrophoresis, for analysis of lipoproteins, 843; for demonstration of hemoglobin J, 889; and errors in analysis of serum, 461
- Embryology, collection in, 23; effect of polarized light on, 1081; of mouse, 28; radiation studies in, 139
- Emotional behavior, assessment of drug effects on, 1033
- Encephalitis, in bats, 227
- Endocrine glands, discovery of two new, 382; synthesis of hormones of, 969
- Endocrinology, recent work in invertebrate, 382
- Energetics, in obesity induced by adrenotropic tumor, 184
- Energy, cellular sources of, 150; increasing world supplies of, 827; solar, 826. *See also* Atomic Energy
- Engineering, molecular, 315
- Engineers, education in humanities for, 833
- Engineers Joint Council, congress of, 595
- Entomology, contributions of Z. P. Metcalf to, 1022
- Enzyme, as biological unit, 149; flavin adenine dinucleotide, 844; inhibitors of, 988; and inhibition of bacterial lecithinase, 1077; model of, 1076; precipitation of, 1032; and osmosis, 60; serum, 1122; significance of "heat-activated," 50; in synthesis of chylol coA and taurocholic acid, 377
- Enzymology, report of studies in, 149
- Eosinophils, physiologic effects of, 324
- Ephedra*, in Canadian Pleistocene deposits, 801
- Ephemeris time, 570
- Epinephrine, as stimulator of phosphorylase activity, 151
- Ergot drugs, and effect on *Betta splendens*, 26
- Erratum, for "Absorption and metabolism of iron," C. J. Gubler, 636; for "Electrophoretic separation of hemoglobins from the chicken," V. L. Johnson and J. S. Dunlap, 229; for "Inhibition of the effect of some carcinogens by their partially hydrogenated derivatives," P. Kotin, H. L. Falk, W. Lijinsky, L. Zechmeister, 378; for "Magnetic techniques for *in vitro* isolation of leucocytes," S. Levine, 323; for "On the rule for leap year," C. C. Wylie, 850; for "Pronuclear fusion as affected by x-rays and by postirradiation anaerobiosis," C. S. Bachofer, 323; for "Yale natural radio-carbon measurements, II," R. S. Preston, E. Person, E. S. Deevey, 464
- Erythrocyte metabolism, 940
- Escherichia coli*, 653, 1071; effect of L-isoleucine on the L-threonine requirement of, 848; metabolic events during synchronized growth of, 1036; parasitism in, 54; in studies of enzymes as biological units, 149
- ESP. *See* Extrasensory perception
- Ethics, concerning research grants, 1015
- Ethnology, of Iroquois Indians, 69
- Ethylene oxide, for sterilizing diets, 229
- Ethylenediamine tetraacetic acid (EDTA), and inhibition of *Clostridium perfringens* toxin, 1077
- European Organization for Nuclear Research (CERN), 216, 922
- Eurycotis floridana*, occurrence of 2-hexenal in, 670
- Evaporograph, 410
- Evis water conditioner, and Federal Trade Commission hearings, 1099, 1107
- Evolution, and *Drosophila robusta*, 630
- Evolution, absolute chronology of human, 924; of shells of invertebrates, 1031; of tetrapod limb, 495
- Evolutionary theory, among the Japanese, 825
- Exercise, and heart disease, 1045
- Experimentation, in parapsychology, 7, 9, 11, 17, 19
- Extrasensory perception, 7, 9, 11, 14, 15, 17, 19, 418, 1027
- ### F
- Fallout, collection of, 1120; and dosage determination, 619; genetic effects of, 1157; kinds of, 657; measurement of, 928; of radioiodine, 982
- Fat, intravenous, 843; in migrating birds, 892; in rat feces, 1032
- Feces, radiation-induced fat formation in rat, 1032
- Federal Trade Commission, and hearings on products, 1099, 1107, 1149
- Federation of American Societies for Experimental Biology, meeting of, 641
- Feedback, negative, in biosynthesis of isoleucine, 848
- Fermentation, 309
- Fermi, E., memorial to, 182
- Fibroblasts, and transformation into malignant tissue, 502
- Firefly, bioluminescence of, 150; as predator of snail, 1130
- Fish, alkaline phosphatase in kidneys of aglomerular, 142; biological research on, 133; effect of ergot drugs on, 26; in Japanese genetics studies, 824; marine, in fresh water, 1035
- Fisheries, biological research on, 133; index of publications on, 1115
- Flavin adenine dinucleotide enzymes, 844
- Fluorides, of copper, 459
- Fluorine, as cause of chlorosis on citrus, 933
- 9- α -Fluorohydrocortisone (FF), 325
- Folic acid antagonists, 840
- Food supply, and solar energy, 830
- Foraminifera, 355, 459, 924, 1061
- Ford Foundation, 405, 1112
- Ford, Henry, Hospital symposium, report of, 149
- Foreign relations, significance of science and technology to, 205
- Forest, alpha-radioactivity in certain types of, 799
- Fossil, of early man, 498, 925; Ecuador late Tertiary ivory-nut palm, 1131; newly found bed of reptile, 1167; plant, 1025; search for along the Amazon, 1068
- Found, C. G., retired, 718
- Franklin, B., 250th anniversary of birth of, 47
- Frequency, standards of 567
- Frog, in experiments with oxygen at high partial pressure, 802
- Fucus furcatus*, effect of polarized light on egg of, 1081
- Fungus, control of in cherry trees, 1175; occurrence in soil of human pathogenic, 876; production of carotene by, 141
- Furnace, solar, 829
- Furry, W. H., 1167
- ### G
- g value, 207, 208
- Galactosemia, enzymatic block in, 635
- Galaxies, colliding, 133; hydrogen emissions from distant, 880
- Gas, in icebergs, 104
- Gastropod, regeneration in, 1126
- General Electric Company, gas turbine division of, 366
- Genetics, contributions of D. R. Charles to, 787; effect of atomic radiation in, 1157; inheritance of blood groups in the rabbit, 935; in Japan, 823; of natural selection associated with ABO blood group, 840; recent work in, 233, 927; recombination in bacteria, 897; and significance of "heat-activated" enzymes, 50; and study of enzymes as biological units, 149; use of paper chromatography in studies of population, 143; in the U.S.S.R., 721
- Genetics Society of Japan, 825
- Geology, and bacterial origin of sulfur, 1124; contributions of P. T. de Chardin to, 92; of Great Bahama Bank, 1025; and measurement of radioactive ages of rocks, 871; new evidence for reversal of geomagnetic field in, 1126; and new fossil plants, 1025; Pleistocene, 801; Pre-Cambrian, of western Canada, 938; and radiocarbon dates, 443; and rate of postglacial rise of sea level, 1082; Tertiary of Ecuador, 1131; during Wisconsin period, 167
- Geomagnetic field, new evidence for reversal of, 1126
- Geophysical Year. *See* International Geophysical Year
- Germany, scientific and technologic assistance for, 1111
- Gibberella cyanogena*, cytogenetics of sex in, 850
- Gibberellic acid, 1067
- Gibberellin, and effect on pea-stem sections, 1132
- Gigantopithecus blacki*, 1024
- Glaciation, absolute chronology of last, 355; in Greenland, 1067; during Wisconsin period, 167, 1062
- Glass blowing, and G. A. Hulett, 93
- Glucagon, as stimulator of phosphorylase activity, 151
- Glucosaccharides, reagent for differentiation of, 543
- Glucose, effect of hypoglycemic sulfonamides on formation of, 885; in r^+ and r viruses, 655
- Glutathione, as inhibitor of browning, 1174; synthesis of, 968
- D-Glyceric acid, and occurrence in tobacco leaves, 415
- Glycine, and action on *Phytophthora fragariae*, 509; in bovine semen, 224
- Glycogen, conversion of lactate into, 375
- Glycolysis, problems in kinetic regulation of, 151
- Goldfish genetics, 824
- Goldschmidt, R. B., and genetics in Japan, 824
- Gordon Research Conferences, program for, 91, 357
- Government, and atomic arms race, 921;

and conversion of sea water, 218; and education, 662; and foreign travel by scientists, 125; and foreign visitors, 615; and relationship between loyalty and awarding of grants, 651, 660; and research in synthetic rubber, 217; and science attachés, 205; and scientific progress, 783; and security policy, 451, 1165
 Grants, ethics concerning, 1015
 Graphs, instructions for preparation of, 715
 Grass, herbicidal action of CDAA on, 847
 Grasshoppers, on the rangelands, 179
 Great Bahama Bank, geologic and ecologic survey of, 1025
 Great Plains, early man and fossil bison near, 327
 Growth curves, 1017
 Growth hormone, and metabolism, 617
 Guinea pig, anaphylactic shock in, 1129; in experiment with adhesion of syphilis spirochete, 989; and in lowered P/O ratios with mitochondria, 324
 Gum acacia, in replica technique, 983
 Günz age, 925

H

Habrobracon, effect of radiostrontium on, 141
Haemogogus, in the U.S., 634
 Hafnium, procurement of, 980
 Hallucinogenic drug, bufotenine as, 886
 Hazen, Edward W., Foundation, and grant for foreign visitors' seminars, 485
 Hearing, status of theories of, 779
 Heart-lung machine, 663
 Heart disease, and mortality among women, 977; physiological role of exercise in, 1075
 Helmholtz, H. von, and resonance theory of hearing, 778
 Hemipteron [*Brochymena annulata* (Fabricius)], 670
 Hemoglobin J, 889
 Hemoglobin-reactive substance in human serum, 461
 Heptanes, G. Edgar's synthesis of, 365
 Herbicide, biochemical action of new, 847
 Heredity. *See* Genetics
 Herpetology, contributions of E. R. Dunn to, 975
Heteropneustes (*Saccobranhus*) *fossilis* (Bloch), induced spawning in, 1080
 2-Hexenal, in cockroach, 670
 High-school students, as laboratory assistants, 725
 Hill reaction, 399
 Histology, in soybean roots, 1129
Histoplasma capsulatum, as a human pathogenic fungus in soil, 876
 History of science, modern structural chemistry, 255; new award for essay in, 261; relativity and quantum theory, 487
 Hogan, A. G., retired, 180
 Holman, E., 1166
 Holometaboly, and insect metamorphosis, 534
 Holter Research Foundation, 507
 Homeostasis, in inflammation, 532
 Homogenization, variations in technique of, 372
Homo sapiens sapiens, age of, 925
 Homozygosity, in *Drosophila robusta*, 630
 Honey-guides, African, 55
 Hormone, effect on phospholipid metabolism of growth, 1084; new synthetic, 95; synthesis of polypeptide, 967; synthesis of posterior pituitary, 969
 Housefly. *See* *Musca domestica*
 Hughes, E. J., retired, 500
 Hulett, G. A., obituary, 93
 Hull body-sway technique, 1075
 Human being, chenodeoxycholic acid in blood serum of, 892; cholinesterase activity of leucocytes of, 987; and clinical

experiment in control of dental caries, 988; component in serum of newborn, 461; in diabetes research, 583; and diseases from lower animals, 94; early, 327; effect of bufotenine on, 886; and effect of cortisone in treatment of diabetes, 417; effect of sensory deprivation on learning rate in, 1074; and fibroblasts made malignant, 502; frequency in morning hours of births of, 985; hemoglobin J in, 889; hemoglobin-reactive substance in serum of, 461; hypertension and hyperaldosteronism in, 503; iron released by breakdown of hemoglobin in, 89; isolation of leucocytes of, 185; metabolite of phenobarbital in urine of, 183; and myeloid leukemia following iodine-131 therapy for thyroid carcinoma, 800; and pathogenic fungi in soil, 876; peculiarities in anatomy of, 366; and polio virus, 1151; radioiodine in thyroid glands of, 982; reticulum in early tuberculosis of, 505; saliva of, 325; serum protein concentrations in, 991; use of 2-methyl hydrocortisones in, 325
 Human genetics, 824
 Hume, D., 14, 15
 Hurricanes, and the continental shelf, 128
 Hydrocarbons, in air, 934
 Hydrocortisone (F), 325
 Hydrogen, heavy, 923; use of solar energy in production of, 402
 Hydrogen atom, fine structure of, 439
 Hydrogen emissions, from distant galaxies, 880
 Hydrography, survey of knowledge of, 55
 Hydroxyllysine, biological effect of, 546; and conversion to 5-hydroxytryptophan, 842
 5-Hydroxymethyl cytosine (HMC), 654
 5-Hydroxytryptophan, synthesis of, 842
 5-Hydroxytryptamine. *See* Serotonin
 Hyperaldosteronism, and hypertension, 503
 Hypertension, and hyperaldosteronism, 503
 Hypoglycemic agent, sulfonamide, 885; in treatment of diabetes, 584
 Hypothalamus, importance of, 1045
 Hypothermia, by internal cooling, 1128

I

Ice ages, a new theory of, 1061
 Iceberg, gases in, 104
 Immigration laws, 614
 Immunity, role of inflammation in, 528
 Index, of books reviewed in *Science*, 748; of fishery publications, 1115; for *Science*, 1112, 1169; of U.S. electronics patents, 839
 Indexing, in scientific fields, 723
 India, laboratories for scientific and industrial research in, 977
 Indian Society of Genetics and Plant Breeding, meeting of, 234
 Indians, research on Iroquois, 69
 Indoleacetic acid (IAA), absence of in the apple, 225; assay of, 105
Industrial Research Laboratories of the United States, 1028
 Infection, change in pattern of nucleic acid metabolism on, 653; experiments on tularemia, 943
 Inflammation, dynamics of, 527
 Influenza virus, and human milk, 932; structure of, 1101
 Information, verifying useless, 725
 Infrared spectrophotometry, for detection of staphylococcus enterotoxin, 64
 Inositol, tissue-culture requirement of, 845
 Insect, physiology of metamorphosis in, 534; recording of sounds of, 1028
 Insecticide, assay of, 464; organic phosphorus, 1173
 Institute of International Education, 883

Insulin, extended by sulfonamide, 585; in phosphorylation of glucose, 505; as a sulfur compound, 967
 Interaction constants, of the alkali atoms, 208
 International Anatomical Congress, 382
 International atomic energy agency, charter for, 788
International Atomics, a new bulletin service, 414
 International Commission on Zoological Nomenclature, 23, 884, 931, 1115
 International Committee on Biological Acoustics, establishment of, 1088
 International Conference on Fatigue in Aircraft Structures, 234
 International Conference on the Peaceful Uses of Atomic Energy, 924
 International Conference on the Use of Antibiotics in Agriculture, 30
 International Congress of Developmental Biology, 1184
 International Council of Scientific Unions, report on, 423-424
 International Geophysical Year, 922; symbols for, 722; whistler observations during, 788
 International Symposium on Cyto differentiation, 1184
 Iodine, in cattle thyroid slices, 26; fallout of radioactive, 982; for therapy for thyroid carcinoma, 800
 Ion transport, in red blood cells, effect of phenothiazine drugs on, 940
Ipomoea batatas, internal cork virosis of, indexed, 506
 Iron, absorption and metabolism of, 87
 Iron oxide, interaction of molybdenum in soils with, 1116
 Iroquois Conference, report of, 69
 Irradiation. *See* Radiation
 Isbell, R. N., retired, 219
 Isoleucine, negative-feedback mechanism in biosynthesis of, 848
 Isopiestic method, 935
 Isotope farm, 930
 Isotopes, for cancer therapy, 800. *See also* individual listings
 Italian National Accademia dei XL, meeting of, 1088
 Ivory-nut palm, from late Tertiary of Ecuador, 1131

J

Japan, airborne radioactivity in, 211; genetics in, 823
 Journals, new, *Astronautical Acta*, 582; *Illinois Journal of Mathematics*, 719; *International Atomics*, 414; *Journal of Solar Energy Research*, 629; *Progress in Health Services*, 221; *Race Relations Law Reporter*, 1169; *Sociometry*, 323; *Sun at Work*, the, 541, 629; *Superior Pupil in Junior High School Mathematics*, the, 22; *U.S. Government Research Reports*, 58
 Jupiter, radio waves from, 452

K

Kansas Academy of Science, report of, 997
 Kelp beds, distribution of, in association with benthic communities, 183
 Kenworthy, M. E., retired, 979
 Keratins, 1074
 Keys, D. A., retired, 135
 Kidney, alkaline phosphatase in aglomerular fish, 142; in enzymatic studies, 150; fate of homografts of, 1179

L

Laboratorio de Biologia Marinha de São Sebastião, 538
 Lactate conversion, into glycogen, 375
 Lactic dehydrogenase, activity of, in myocardial infarction, 1122
 Lactose, in the Sapotaceae, 1083

Lamporphorus tenebrosus, as predator of snail, 1130
 Latex, crosslinking of, 1123
 Lava flows, in Arizona, 1126
 Law, L. W., winner of AAAS-Rosenthal cancer award, 20
 Leaching, radioisotopes to indicate loss of plant nutrients by, 1039
 Lead, in measuring ages of rocks, 871
 Learning, in cats, 376; effect of reserpine on, 1116
 Least squares lines, methods of obtaining, 102
 Leda clay, pollen in, 1118
 Leith, C. K., retired, 793
Leucichthys johannae, nitrogen in swim-bladder of, 59
 Leucocytes, cholinesterase activity of human, 987; separation of, by magnetic techniques, 185
Leuconostoc mesenteroides, as affected by hydroxylysine, 546
 Leukemia, and influence of inoculum concentration on effectiveness of treatment with amethopterin, 840; monocytic, 458; myeloid, following massive iodine-131 therapy, 800
 Leukocytosis, and inflammation, 528
 Leukotaxine, and inflammation, 527
 Library, contributions of R. C. Archibald to, 622; need for a national medical, 869; punched-card machines for making searches in, 722
 Lichen, depsides and depsidones, ultraviolet absorption of, 671
 Life zones, during Wisconsin period, 167
 Light, polarized, effect on development of *Fucus furcatus*, 1081
 Lilly and Company, Eli, Theobald Smith award of, 717
 Linguistics, 705
 Lipid, in migrating birds, 892; oxidative effects in glass of irradiation of, 1178
 Lipoprotein, effect of intravenously administered fat on serum, 843
 Literature, documentation center for atomic energy and radioactive isotope, 94; principles for biological abstracting, 578
 Literature citation, indexes for, 61; lack of recognition of foreign works in American, 990
 Lithium chloride, urea complexes of, 897
 Liver insulinase, effect of hypoglycemic sulfonamides on, 885
 Liver mitochondria, and uncoupling of oxidative phosphorylation, 324
 Lockspeiser, B., retired, 411
 Logic, and ESP, 15
 Louisiana, biological origin of native sulfur in, 1124
 Loyalty. *See* Security
Lumbricus terrestris, basis for after-discharge in giant axon of, 803; latent learning in, 222
 Luminescence, in disordered zinc sulfide, 451; in *Chlorella*, 462
 Lung cancer, and tobacco, 227
 Lymph, and polio virus, 1153
 Lysenko, T. D., 721
 Lysergic acid diethylamide (LSD-25), and effect on *Betta splendens*, 26; and effect on cortical mechanism, 804; and release of serotonin, 993

M

Macelwane, J. B., obituary, 1109
 Macroglobulin, as a defect in clotting mechanism, 1118
 Magnet, super permanent material for, 1165
 Magnetic measurement, of biological substances, 499
 Maine, pollen from Leda clay of, 1118
 Maize, action of gibberellic acid on, 1067

Maleic hydrazide (MH), effect on photosynthesis of foliar sprays of, 894
Malus auxin 2, 225
 Manganese-bismuth, for super permanent magnets, 1165
 Marine biology, and benthic communities inhabiting kelp beds, 183; in Brazil, 538; contributions of R. W. Miner to, 879
 Marine borers, resolutions by scientists interested in, 514
 Marriott, R. W., obituary, 536
 Mass determinations, new method for, 1176
 Mass spectrometry, in measuring ages of rocks, 871
 Massachusetts Institute of Technology, 98, 317
 Mast cells, staining and counting of, 941
 Mathematical biology, committee on, 725
 Mathematics, and biological response curves, 1017; contributions of R. C. Archibald to, 622; courses for teachers of high-school, 1166; emphasis on, 965; methods of obtaining least squares lines, 102; secondary-school enrollment in, 880; training-school for teachers of, 836; use of variables in pure and applied, 547
 McBurney, J. W., retired, 1168
 Mean rate of change, graphic evaluation of, 507
 Measurement, of ages of rocks, 871; of the magnetic moment of the electron, 207; of particle volumes, 934; radio-carbon, 1061, 1082
 Mechanism, 11, 15
 Meckel, P. F. T., and experiments in physiology of hearing, 778
 Medicine, contributions of C. R. Moore to, 496; contributions of J. P. Peters to, 1023; Ford funds for schools of, 1112; need for national library on, 869; research at Brookhaven National Laboratory in, 95; support of research in, 353
 Mees, C. E. K., retired, 180
 Melanoma, action of *p*-{di(2-chloroethyl)}-amino-L-phenylalanine on mouse, 984
 Melchers, L. E., retired, 1068
Meloidogyne hapla, and effect on tomato roots treated with MOPA, 374
 Mendelism, in Japan, 823
Menestho bisuturalis, as an oyster enemy, 1119
 Mercury-vapor lamp, for recognizing cerium earth minerals, 888
Meriones libycus, new laboratory animal, 790
 Merrill, E. D., obituary, 831
 Mescaline, 26
 Metabolism, aromatic, in schizophrenia, 1029; of ascites cancer cells, 312; model for study of cellular, 1076; erythrocyte, 940; effect of growth hormone on phospholipid, 1084; during synchronized growth of bacteria, 1036
 Metabolite, of phenobarbital in human urine, 183
 Metal whiskers, 1165
 Metals, fatigue of, 151; in underdeveloped countries, 541
 Metallo-porphyrin complexes, 502
 Metamorphosis, physiological interpretation of, 534
 Metastable atoms, and hydrogen fine structure, 439
 Metcalf, Z. P., obituary, 1022
 Meteorology, and peaceful uses of atomic energy, 976; techniques and apparatus in, 127
 Methionine (S^{35}), 1074
 Methoxyphenylacetic acid, α - (MOPA), effect of *Meloidogyne hapla* on tomato roots treated with, 374

2-Methyl hydrocortisone, 324
 Mexico, new zinc arsenate from, 1039
 Microradiography, high-resolution, 370
 Microscopy, replica technique for, 983; x-ray and electron, 370
Microsporium gypsum, 878
 Microwave spectroscopy, and hydrogen fine structure, 439
 Midwest Cosmic Ray colloquium, 997
 Military-Medical symposium, 719
 Milk, human, bifidus factor in, 932
 Milky Way, 133
 Miner, R. W., obituary, 879
 Mineral, creation of rare, 20; method for recognizing cerium earth, 888; new calcium, 1078; new vanadium, 990; new zinc, 1039; radioactive methods of measuring age of, 871
 Mineralogy, of shells of Paleozoic invertebrates, 1031; synthesis of coffinite, 105
 Mitochondria, lowered P/O ratios with, 324; oxidative phosphorylation in, 1105
 Molecular beams, 207
 Molecular engineering, 315
 Mollusk, disease in, 1130
 Molybdenum, interaction of iron oxide in soils with, 1116; research on, 666
 Monazite, absorption spectrum of, 888
 Monkey, effects of bufotenine on, 886; effects of drugs on emotional behavior of, 1034; effect of reserpine on learning and performance in, 1116; and polio virus, 1151; techniques for measuring activity of, 1170
 Monocytic leukemia, 458
 Monoiodotyrosine, and thyroid gland, 26
 Moore, C. R., obituary, 496
 Mosquito, list of biting, 1028; quantitative microinjection of, 228; role of diet in egg development by, 890
 Mouse, action of *p*-{di(2-chloroethyl)}-amino-L-phenylalanine on melanoma in, 984; bactericidal reaction in serum of, 61; carcinomas controlled in, 539; cocarcinogens in, 588; effect of endrin on pine, 61; in experiments with central nervous system effects of diphenhydramine, pentobarbital, and strychnine, 1170; in experiments with inhibiting effect of hydrogenated derivatives on carcinogens, 102; with hereditary muscular dystrophy, 367; in leukemia studies, 840; and induced obesity by adrenotropic tumors, 184; protection against x-irradiation death in fetus of, 28; pseudotuberculosis in, 463; sebaceous glands in thiamine-deficient, 634; and susceptibility to audiogenic seizures, 223; tularemia experiments on, 943
 Mumford, R. W., retired, 21
 Murray, W. J., retired, 412
Musca domestica, organic phosphorus insecticides for control of, 1173
 Muscle, role of ATP in contraction of, 632
 Muscular dystrophy, strain of mouse with hereditary, 367
 Mycology, fellowship in, 322; medical, 876
 Mycoses, information applicable to control of, 878
 Myocardial infarction, serum lactic dehydrogenase activity in, 1122
 Myo-inositol, 845

N

National Academy of Sciences, and committee on effects of atomic radiation, 1110, 1157; elections of, 833; and government policy on relationships between loyalty and awarding of grants, 651, 660; and need for high-school physics, 337; and role of science in formulating foreign policy, 1067
 National Academy of Sciences-National

Research Council, Chemical-Biological Coordination Center of, 723
 National Association of Science Writers, and survey of science news reading, 95, 708
 National Bureau of Standards, and the Case against Pioneers, Inc., 1059
 National Education Association, teacher supply and demand survey of, 85
 National Fund for Medical Education, 318
 National Institute of Allergy and Infectious Diseases, designation as, 258
 National library of medicine, proposal for, 869
 National Merit Scholarship Corporation, 499, 836
 National Register of Scientific and Technical Personnel, 882
 National Science Fair, 901, 1111
 National Science Foundation, 664, 919, 931, 1088; appropriations for, 451; and conference on theoretical geophysics, 289; and foreign travel by scientists, 125; and institutes for science and mathematics teachers, 177; and policy on awarding grants, 651, 661; and register of scientific and technical personnel, 882; and report on science and engineering in industry, 133; and synthetic rubber, 217
 National Society of Professional Engineers, as affiliate of AAAS, 134
 Natural selection, associated with ABO blood group, 840
 Naval Research Laboratory, and research associateship plan, 94
 Neanderthal man (*Homo sapiens neanderthalensis*), 926
 Necrosis, and inflammation, 530
 Negev, ancient smelting in, 587
 Negro, serum protein concentrations in North American, 991
 Nerve, and ascending impulses in pyramidal tract, 895; effects of OHP on peripheral, 802
 Nervous system, of earthworms, 222; and conditioned stimulus, 936
Neurospora, in studies of enzymes as biological units, 149
 New England, oyster enemies in waters of, 1119
 New Guinea, pygmies in, 977
 New York University, and survey of science news reading habits, 708
 Nitrogen dioxide, in air, 934
 Nitrogen, in swimbladder of whitefish, 59
 Nobel prize lecture, by W. E. Lamb, Jr. (physics), 439; by P. Kusch (physics), 207; by L. Pauling (chemistry), 255; by V. du Vigneaud (chemistry), 967
 Nomenclature, for intraspecific differences in rabbit serum proteins (*alotypy*), 1167; anatomical, 884; in ecology, 1127; for preparations of succinic dehydrogenase, 150; in zoology, 23, 884, 931, 1115
 North America, Wisconsin climate and life zones in, 167
 Nuclear energy, WHO study on protection against, 366
 Nuclear magneton, 208
 Nuclear reactors, accidents in, 718, 1111
 Nuclear Science and Engineering congress, 595
 Nuclear technology, 923
 Nuclear weapons testing, dosages of fallout from, 619; hazards from worldwide distribution of, 211, 657; radioiodine fallout from, 982
 Nucleic acid, metabolism of, 653; in studies of protein synthesis, 149
 Nucleoplasm, sensitivity to radiation of, 1020
 Nucleotide, tri- and diphosphopyridine, 844

Nucleus, counts of, 372; spiral male in *Ambrosia*, 633
 Nutrient, radioisotopes for indicating loss of plant, 1039

O

Oat seeds, radiosensitivity of, 1125
 Obesity, induced by adrenotropic tumors, 184
 Observatories, in Southern Hemisphere, 577
 Ocean, and chronology of last glaciation, 355; cosmic spherules in deep, 450; survey of North Pacific, 55
 Oceanography, and radiocarbon dating, 443; techniques and apparatus in, 127
Opsanus tau, alkaline phosphatase in kidneys of, 142
 Organic substances, structural chemistry of, 257
 Orinase, 258, 885
 Orthophosphate, 324
 Orthophotoscope, for photographic mapping, 790
Oryzias latipes, for genetics studies, 824
 Osburn, R. C., obituary, 576
 Osmosis, new scheme for performance of, 60
 Ossa suprasternalia, 366
 Ott, P. W., retired, 56
 Oxalic acid, synthesis of, 1038
 Oxidation-reduction curves, 1017
 Oxidative phosphorylation, spectrophotometric studies of, 1105
 Oxo reaction, and application to unsaturated sugars (glycals), 1177
 Oxygen, at high partial pressure (OHP), toxic action of, 802
 Oxygen isotopes, fractionation during respiration, 574
 Oxygen isotopic analyses, 924
 Oxytocin, synthesis of, 967
 Oyster, enemies of, 1119
 Oyster borer, regeneration of drilling mechanism in, 1126
 Ozone, 934

P

Pacific Ocean, synoptic survey of, 55
 Paget, R., obituary, 215
 Paleoanthropology, contributions of P. T. de Chardin to, 92
 Paleobotany, 801
 Paleoclimatology, of Maine, 1118
 Paleomagnetism, 1126
 Paleontology, of shells of invertebrates, 1031
 Paleotemperatures, of Pacific bottom waters, 459
 Palm, ivory-nut, 1131
 Palynology, and evidence for climate and life zones during Wisconsin period, 169; of Leda clay of Maine, 1118
 Pancreas, elastase production in dog, 669
 Parabiosis, fate of kidney homografts in, 1179
 Paradamite, 1039
 Parapsychology. *See* Extrasensory perception
 Parapsychology Foundation, 18
 Parasitism, malaria, 228
 Parathion, for control of housefly, 1173
 Parotid gland, in sodium-depleted sheep, 986
 Pasteur reaction, adrenal-cortical extract inhibition of, 797
 Patents, index of electronics, 839; need for examiners of, 577
 Pavlovian Society for the Experimental Investigation of Behavior, meeting of, 1088
p-{Di(2-chloroethyl)}-amino-L-phenylalanine, mouse melanoma affected by, 984
 Pea, effect of gibberellin on stem sections of, 1132

Peanut Mine, Colorado, new vanadium mineral from, 990
 Peat, binding of Cu(II) by, 330; as a binder, 1025
 Pentobarbital, enhancement by diphenhydramine of central nervous system effects of, 1170; rat behavior affected by, 371
 Peptides, synthesis of cystine, 968
 Perkin, W. H., centennial of, 319
 Peroxide formation, during irradiation in glass, 1178
 Peters, J. P., obituary, 1023
 Petroleum science, contributions of G. Egloff to, 832
 Pharmaceuticals, radioactivity in, 20
 Pharmacology, of behavior, 1033; contributions of A. L. Tatum to, 449
Phaseolus vulgaris, effect of *Malus auxin* 2 on, 225
 Phenobarbital, metabolite of, in human urine, 183
 Phenothiazine drugs, 940
 Philosophy, 307; contribution of W. L. Bryan to, 214; and ESP, 11, 14; and value of science, 397
 Phosphatase, alkaline, in kidneys of glomerular fish, 142
 Phosphates, alkyl, bonding of molecular addition complexes of, 1121
 Phospholipids, symposium on, 468
 Phosphorus, control of housefly with organic, 1173; labeling with radio-, 1084
 Phosphorylase, as test enzyme during isolation of chloroplasts in Carbowax, 1033
 Phosphorylated intermediates, determination of, 545
 Phosphorylation, adrenal-cortical extract inhibition of aerobic, 797; of glucose, 505; oxidative, 324; spectrophotometric studies of oxidative, 1105
 Photochemistry, 934; and conversion of solar energy, 399
 Photoinduced absorption spectrum changes in *Chlorella*, 462
 Photolysis of water, 404
 Photomultiplier tube, transmission type, 663
 Photosynthesis, as catalyzed by whole and broken chloroplasts, 150; effect of maleic hydrazide on, 894
Phycomyces blakesleeana, in experiments with production of carotene, 141
 Physicists, responsibilities of, 397
 Physics, contributions of G. Placzek to theoretical, 409; need for high-school, 337; recent work in low-temperature, 190; and theories of hearing, 778; in the U.S.S.R., 1110
 Physiology, of hearing, 778; iron requirements in, 90; reports of recent work in, 1045
Phytelephas olsoni, from Ecuador, 1131
 Phytogeography, 801
Phytophthora fragariae, and interaction products of glycine and dextrose, 509
Picea glauca, dissociation of cultures from, 457
 Pigeon, conditioned behavior in, 936; direction differences in homing of, 329
 Pigment concentrating factors, in fiddler crab, 585
 Pitch, theories of discrimination in, 778
Pithecanthropus, and fossil primates in Africa, 498
 Pituitary hormones, metabolism and anterior, 617; synthesis of posterior, 969
 Placzek, G., obituary, 409
 Plant, new fossil, 1025; radioisotopes to indicate loss of nutrients from, 1039
 Plasma, effect of growth hormone and acromegaly on phospholipid, 1084; postirradiation protection of rabbits by injection of splenic, 1080
 Plasma protein, interference of blood clotting by abnormal, 1118

Plasmodium, 228
 Plastics, x-radiation of, 370
 Pleistocene epoch, 801, 924, 1061
 Pliocene epoch, 926
 Pluto, status of, 896
 Polarity, of *Fucus furcatus* determined by polarized light, 1081
 Poliomyelitis, new process for preparing vaccine for, 452; pathogenesis of, 1151
 Pollen, in Leda clay of Maine, 1118
 Polyphenoloxidase, and browning with chlorogenic acid, 1174
 Polyribonucleotides, with 5'-phosphomonoester end-groups, 415
 Polytyrosine, and anaphylactic shock in guinea pigs, 1129
 Polytyrosylgelatin, and anaphylactic shock in guinea pigs, 1129
 Pontecorvo, B., 977
 Population, increase of, in the U.S., 218
 Population genetics, of *Drosophila robusta*, 630; use of paper chromatography in studies of, 143
 Potassium-argon method of measuring ages of rocks, 871
 Potassium excretion, physiologic effects of, 324
 Pressure, toxic action of oxygen at high partial, 802
 Price, G., 7, 13, 14, 15, 19
 Primate, fossils of, 498; giant, in Tibet, 1024; South African Pleistocene, 55
Pristis microdon, in fresh water, 222, 1035
 Probability, and ESP, 15
 Pronuclei, effects of x-rays on fusion of, 139
 Protein, and concentrations in North American Negroid serum, 991; crystal structure of turnip yellows virus, 849; effect of urea on, 891; inhibitors of, 53; as stimulant in mosquito egg development, 890; symposium on recent work on, 854; synthesis of, 149, 1075
Proteus vulgaris, in study of "heat-activated" enzymes, 50
 Proton, magnetic moment of, 208
Pseudosarcophaga affinis, ethylene oxide in diet of, 229
 Psi. See Extrasensory perception
 Psychology, contributions of W. D. Scott to applied, 408; of hearing, 778
 Pump, mechanical, and solar energy, 828
 Punched cards, library searches with, 722
 Pygmies, in New Guinea, 977
 Pyramidal tract, explanation for the so-called "ascending impulses" in, 895
 Pyrimidine, new, 654

Q

Quahogs, green crab and redistribution of, 992
 Quantum electrodynamics, 207; and hydrogen fine structure, 439
 Quantum interaction of the free electron, first international conference on, 854
 Quantum mechanics, 255
 Quantum theory, 207; history and implications of, 491

R

Rabbit, blood groups of, 935; in experiment with adhesion of syphilis spirochete, 989; in experiments with tranquilizing drugs, 992; intraspecific differences in serum proteins of, 1166; phosphorylation of glucose in tissue of, 505; postirradiation protection of, 1080; in study of monocytic leukemia, 458; in studies with Orinase, 584, 885
 Rabi, I. I., 209
 Rabies, from rats, 227
 Radiation, effects on lipid in glass, 1178; and effects on man and his environment, 800, 928, 1110, 1157; and effects on pronuclear fusion, 139; in emission

nebula, 318; and fecal fat formation in rat, 1032; mouse fetus and x-, 28; protection against, 663, 1080; sensitivity of cells to, 1020; sensitivity of oat seeds to, 1125; use of solar, 399; WHO study of protection against, 366
 Radioactive materials, biological effects of, 800; in certain forest types, 799; collection of, 1120; in measuring ages of rocks, 871
 Radioactivity, artificial, 212, 657; atmospheric, 1120; disposal of waste products of, 666; international comparisons of standards of, 895; natural, 212, 657; in pharmaceuticals, 20
 Radioautography. See Autoradiography.
 Radiobiology, international cooperation in, 845
 Radiocarbon, dating by, 355, 442, 464, 871, 924, 938, 1061, 1082; and *Streptomyces aureofaciens*, 1030
 Radiocobalt, reabsorption of, 65
 Radio-frequency spectroscopy, 207
 Radioiodine, for therapy for thyroid carcinoma, 800; in thyroid glands from fallout, 982
 Radioisotopes, distribution of, 178; and identification by color film, 333; to indicate loss of plant nutrients by leaching, 1039; in measuring ages of rocks, 871. See also individual entries
 Radiophosphorus, labeling with, 1084
 Radio stars, absorption effect in spectra of, 133
 Radiostrontium, and effect on wasps, 141
 Radiosulfate, and incorporation by the inner ear, 1074
 Radio telescope, for Southern Hemisphere, 452
 Radio waves, from Jupiter, 452; sources of, 21
Rana pipiens, in study of muscle contraction, 632
 Random numbers, for library searches, 722
 Rat, in bioassay of aldosterone, 504; catheptic activity in tissues of, 1082; conversion of lactate into glycogen in skeletal muscle of, 375; effect of drugs on emotional behavior of, 1034; effect of ethylene oxide in diet of, 229; effect of pentobarbital sodium on behavior of, 371; fate of kidney homografts in, 1179; inner ear of, 1074; in lowered P/O ratios with mitochondria, 324; nuclei counts on liver homogenates of, 372; radiation-induced fat formation in feces of, 1032; salivary amylase in, 841; in studies with Orinase, 584, 885; in studies with tranquilizing drugs, 24; and susceptibility to audiogenic seizures, 223; and tolerance to DDT, 227
Rauwolfia, and serotonin-releasing activity, 992
 Reading habits, statistics on, 703; and survey of science news, 708
 Recombination, in bacteria, 897
 Recording, of bird voices, 718; of insect sounds, 1028; of sounds made by baleen whales, 834
 Red shift, measurement of, 133
 Refractometry, cell, 24; microscopic, 1176
 Regeneration, in gastropods, 1126
 Relativity, history and implications of, 487; recent work in, 492
 Replica, technique for, 983
 Research, ethics concerning grants for, 1015; and loyalty, 660; need for basic, 353; program grants for, 525; report on industrial, 133
 Reserpine, and effect on learning and performance, 1116; and effect on secretion of ACTH, 418; mode of action of, 992; new source of, 452; total synthesis of, 929

Resonance, theory of, 256, 778
 Resources Research, Inc., formation of, 368
 Respiration, 309; oxygen isotope effect in, 574
 Reticulum, in early tuberculosis, 505
 Retractin, in blood, 796
 Rh allele *cdE*, 927
 Rhine, J. B., 7, 15, 17
 Ribonucleic acid, as enzyme inhibitor, 52
 Rice, genetics of, 825
 Rieckenberg phenomenon, in syphilis, 989
 Rockefeller Foundation, 665, 666
 Rocks, measurement of radioactive ages of, 871
 Rodenticide, endrin used as, 61
 Rosaceae, indoleacetic acid in, 225
 Rous sarcoma, inhibition of, 1073
 Rubber, crosslinking of latex, 1123; research in synthetic, 217
 Rubidium-strontium method of measuring ages of rocks, 871
 Rumford, Count (Benjamin Thompson), 221
 Russian physics journal, English translation of, 424
 Rust, plant, replica technique for spores of, 983

S

Saliva, amylase in rat, 841
 Salk vaccine, dosage schedule for, 624; Massachusetts use of, 178; and pathogenesis of poliomyelitis, 1151
 Salkowski assay of indoleacetic acid, interference in, 105
Salmonella, in studies of enzymes as biological units, 149; transduction in, 233
 Salt, biological origin of sulfur in domes of, 1124
 Saltonstall-Kennedy Act, 133
 Sapotaceae, lactose in, 1083
 Saprophytism, among fungi and soil, 876
 Sarcoma, Rous, inhibition of, 1073
Saturday Review, section on science in, 565
 Sawfish, in fresh water, 222, 1035
 Schizophrenia, aromatic metabolism in, 1029, 1078
 Schweitzer, A., 216
Science, editor for, 833; index of books reviewed in, 748; parapsychology in, 11, 13; preparation of book reviews for, 716; preparation of graphs for, 715; preparation of manuscripts for, 715; publication date of index to, 1112, 1169; reprints from, 715; types of articles in, 714
 Science, contribution of W. L. Bryan to, 214; courses for teachers of high-school, 1166; and foreign policy, 1067; international cooperation in, 337, 922; junior academies of, 976; and loyalty, 651, 660; methods and aims of, 165; philosophy of, 1099; in the *Saturday Review*, 565; secondary-school enrollment in, 880; and security, 923; and society, 710, 777; in the Soviet Union, 1067; State Department's opportunity in, 205; and the supernatural, 7, 9, 11; universality of, 777
 Science attachés, 1067
 Science Clubs of America, 901
 Science counselors, study on use of, 624
 Science fair, 901, 1111
 Science news reporting, 95, 708; training for, 720
 Science talent search, 1955 winners of, 321
 Science teachers, geography workshop for, 322; plan to increase income of, 261; summer course for, 321; training program for, 836, 980; tuition aid for high-school, 98
 Science teaching, efforts toward improving, 177, 624, 1070

- Science Teaching Improvement Program, 258, 624, 976, 1166
- Scientific Civil Service, in India, 259
- Scientific Committee on the Effects of Atomic Radiation, 468, 845
- Scientific information, flow of, 205
- Scientific literature, indexing of, 723; principles for biological abstracting, 578
- Scientific manpower, and attitudes toward careers, 437; statistics on, 45
- Scientific Manpower Commission, 452
- Scientific Manpower Project, 836
- Scientific method, understanding of, 777
- Scientific principles, and FTC hearings, 1149
- Scientific progress, and secrecy, 783
- Scientific research, support of, 217
- Scientific writing, literary style in, 713; production in, 724; use of abbreviations in, 720
- Scientists, ages and productivity of, 724; and ethics concerning grants, 1015; foreign travel by, 125; and news reporters, 707; perspective of, 777; and position in Federal Trade Commission hearings, 1099, 1149; salaries of, 367, 789, 976; supply of, 437, 582; training of, 499, 725
- Scott, W. D., obituary, 408
- Sea level, rate of rise, 1082
- Sea water conversion, 218
- Sears, P. B., 267
- Sebaceous glands, and thiamine deficiency, 634
- Security, and attitude toward foreign visitors, 615; and J. P. Peters, 1023; regarding atomic energy industry, 451; through free communication, 923; and scientific progress, 783; Supreme Court ruling on, 1165
- Seismology, contributions of J. B. Macellwane to, 1109
- Semantics, 705
- Semen, bovine, 224
- Sensory processes, study of, 668
- Sericulture, in Japan, 823
- Serotonin, antagonism of chlorpromazine to, 24; compared with bufotenine, 886; and effect on bleeding, 834; releasing activity of, 992; in patients with malignant carcinoid, 669
- Serum protein, in tissue culture, 326; intraspecific differences in rabbit, 1166; in the North American Negro, 991
- Sex, in *Drosophila*, 824; in *Gibberella cyanogena*, 850; prenatal diagnosis of, 542, 548
- Sharks, in fresh water, 222
- Sheep, parotid secretion in sodium-depleted, 986
- Shells, of Paleozoic invertebrates, 1031
- Shock, anaphylactic, in guinea pigs, 1129; and cooling of body temperature, 1128
- Shoreline, recession of, 367
- Silkworm genetics, 823
- Simplotite, 1078
- Slepian, J., retired, 453
- Slime mold, acrasin as chemotactic agent in aggregation of, 1171, 1172
- Smelting, ancient, 587
- Theobald Smith award, 717, 1167
- Smoking, and lung cancer, 450
- Snail, disease in the giant African, 1131
- Snowflake, study of formation of, 452
- "Snowman," abominable, 1024
- Snyder, L. H., 266
- Soal, S. G., 7, 15, 17
- Social science, 307
- Society of American Bacteriologists, report of, 901, 1137
- Society for Industrial and Applied Mathematics, as new associate of AAAS, 881
- Society of Rheology, meeting of, 598
- Society for the Scientific Study of Religion, report of, 70
- Socio-psychological prize, 976
- Sodium, effect on sheep of depletion of, 986; physiologic effects of excretion of, 324
- Sodium fluoride bead test, 419
- Sodium N-lauroyl sarcosinate, in clinical control of dental caries, 988
- Soil, and climax vegetation types, 542; interaction of molybdenum and iron oxide in, 1116; as reservoir for human pathogenic fungi, 876
- Solar energy, chemical conversion of, 399; economics of, 828; measurements of, 827; world symposium on, 826
- Solar stills, 830
- Solar system, 319
- Solids, code for atomic structure of, 790
- Solomon, H. C., retired, 1168
- Sonoran Desert, vegetation and soil of, 542
- Sound, from edge waves, 130; and theories of hearing, 778
- Southern Hemisphere, observatories in, 577
- Southwestern and Rocky Mountain Division of AAAS, report of, 1184
- Soviet Professional Manpower: Its Education, Training, and Supply*, 56
- Soybean, histological changes induced by 2,4-dichlorophenoxyacetic acid in roots of, 1129
- Spatial distribution, grouping in, 373
- Speciation, effect of Wisconsin period on, 175
- Spectra, of lichen depsides and depsidones, 671; of liquid scintillators, 1071
- Spectrophotometry, for detection of staphylococcus enterotoxin, 64; infrared, 670, 671; report on recent work in, 151; for studies of oxidative phosphorylation, 1105
- Spectroscopy, of desoxyribonucleic acid, 328; radio-frequency, 207
- Speech, contribution of R. Paget to, 215
- Speleology, 20, 937
- Spermatozoa, survival time of bovine, 224
- Spores, replica technique for bacterial and plant rust, 983
- Staining, of mast cells, 941
- Standards, for biochemical products, 54; of radioactivity, 895
- Standing wave theory of hearing, 779
- Stanford Research Institute, particle bank at, 980
- Staphylococcus, detection of enterotoxin in, 64
- Staphylococcus aureus*, in studies of protein synthesis, 149
- Statistics, of biological response curves, 1017; contributions of D. R. Charles to, 787; and grouping in spatial distributions, 373; need for training in, 712
- Steiner, G., retired, 1026
- Sterility, in wasps caused by radiostrontium, 141
- Steroid, effect of DDD on 17-OH-cortico-, 140; new series of, 324
- Steroid anesthetics, detoxification of, 940
- Stimulation, deprivation of sensory, 1074
- Streptococcus faecalis*, as affected by hydroxyllysine, 546
- Streptomyces aureofaciens*, in biosynthesis of chlorotetracycline, 1030
- Strontium, radioactive, 141, 657
- Strychnine, enhancement by diphenhydramine of central nervous system effects of, 1170
- Stylochus ellipticus*, as an oyster enemy, 1119
- Sugars, lengthening the carbon chain of, 1177
- Sulphydryl compounds, as inhibitors of browning, 1174; color test for, 981; as involved in flavin adenine dinucleotide enzymes, 844
- Sulfonamide, glucose formation by liver affected by hypoglycemic, 885; as an insulin extender, 585
- Sulfonyluracils, hypoglycemic action of, in patients with diabetes, 583
- Sulfur, biological origin of, 1124; from insulin to oxytocin, 967; radioactive, 1074
- Supernatural, and science, 7, 9
- Surgery, cooling of body temperature for, 1128
- Swanscombe man, 410, 925, 926
- Sweetpotato, cork virus leafspots on, 1034; protein synthesis in, 1075
- Swiss chard, in studies of effect of maleic hydrazide on photosynthesis, 894
- Synergism, of hormones, 617
- Syphilis, adhesion of spirochete of, 989
- Systemics, control of cherry leaf-spot fungus, 1175

T

- Taconite, peat as a binder for, 1025
- Tatum, E. L., obituary, 449
- Taurocholic acid, enzymatic synthesis of, 377
- Taxonomy, contributions of R. C. Osburn to, 576; of insects reinterpreted, 534; use of paper chromatography in, 143
- Technical education, in the United States, report on, 928
- Technique, for analyzing gases in icebergs, 104; for assay of indoleacetic acid, 105; for assay of insecticides with *Artemia salina*, 464; for collecting atomic bomb debris from the atmosphere, 1120; for color testing of thiols and thioesters, 981; for demonstration of new hemoglobin J, 889; for detection of staphylococcus enterotoxin, 64; for determining bactericidal reactivity, 63; for determining drug action, 100; for determining formation constants for Cu(II)-peat complexes, 330; for distinguishing intact cells from free nuclei, 24; for graphic evaluation for mean rate of change, 507; for grouping in spatial distributions, 373; for high-resolution microradiography, 370; in homogenization, 372; for intracellular recording from moving tissues, 100; for isolation of human pathogenic molds from soil, 876; for isolation of leucocytes, 185; for mass determinations on microscopic particles, 1176; for measuring ages of rocks, 871; for measuring the magnetic moment of the electron, 207; for obtaining electrophysiological correlates of conditioned response in cats, 376; for obtaining least squares lines, 102; for obtaining oocysts of the malaria parasite, 228; of paper chromatography in taxonomic studies, 143; for purification and crystallization of Coxsackie virus, 1037; for quantitative infrared spectroscopy of desoxyribonucleic acid in the fractional milligram range, 328; for recognizing nonopaque cerium earth minerals, 888; for replica in electron or light microscopy, 983; for sodium fluoride bead test, 419; for staining and counting mast cells in tissue sections, 941; for study of oxidative phosphorylation, 1105; for synthesis of coffinite, 105; for synthesis of 5-hydroxypipicollic acid and separation of its diastereoisomers, 842; for synthesis of oxalic acid, 1038; of synthesis of oxytocin, 971
- Telepathy. *See* Extrasensory perception.
- Telephone relay, importance of metal whiskers to, 1165
- Telephone theory of hearing, 781
- Television, biological applications of color, 589
- Temperature, cooling of body, 1128; during glacial stages, 1061; and effect on

measurement, 934; of surface of Arctic Ocean, 1063; variations in, 924
 Tetrapod limb, origin of, 495
 Texas, biological origin of native sulfur in, 1124
 Thailand, legendary tribe in, 880
Thais haemostoma, regeneration in drilling mechanism of, 1126
 Thermal cracking, in burning tobacco, 227
 Thiamine deficiency, and effect on sebaceous glands, 634
 Thioesters, color test for, 981
 Thiols, color test for, 981
 Thiophosphates, bonding of molecular addition complexes of, 1121
 Thompson, Benjamin (Count Rumford), 221
 Thorium, fluorescent, 419; in measuring ages of rocks, 871; in Soviet nuclear explosion, 833
 Thorium nitrate, solubility of, 1121
 Thorne, G. L., 792
 Thyroid gland, formation of monoiodotyrosine in, 26; iodine-131 treatment of carcinoma of, 800; radioiodine in, 982
Tillandsia usneoides, 933
 Time, standards of, 567
 Tissue culture, cancer chemotherapy in, 848; inositol requirement of cells in, 845; possible function of serum proteins in, 326; tobacco, 590
 Tissue dissociation into fragments and cells, 457
 Titanium, and chronology of last glaciation, 355
 Titration curves, 1017
 Tobacco, occurrence of D-glyceric acid in leaves of, 415
 Tobacco smoke, temperature of, 226
 Tomato, *Meloidogyne hapla* effect on MOPA-treated roots of, 374
Torula yeasts, 309
 Toxins, bacterial, effects on metabolism of liver mitochondria, 324
 Traveling wave theory of hearing, 779
Treponema pallidum, particulate adhesion of, 989
 3,4,6-Tri-O-acetyl-D-glucal, and reaction with carbon monoxide and hydrogen, 1177
 Tryptophan, in diet of schizophrenics, 1078; in studies on patients with malignant carcinoid, 669
 Tsunamis, and edge waves on the continental shelf, 131
 Tuberculosis, silver positive reticulum in early, 505
 Tularemia, infectivity to mice, 943
 Tumor, and effect on catheptic activity of rat tissues, 1082; leukemic mouse, 840; obesity induced by adrenotropic, 184; treatment of Harding-Passey mouse melanoma type of, 984
 Tuna, albacore, capture of, 790
 Turnip yellows, crystal structure of virus of, 849

U

Uca pugnator, lightening and darkening factors in, 585
 Ultramicroelectrode, flexible mounting of, for intracellular recording of moving tissues, 100
 UNESCO, 922; and arid zone research,

537; and regional research center at Calcutta, 56; technical assistance program of, 134
 United Nations, 924; Economic and Social Council of, 717; as sponsor of agency for international cooperation in radiobiology, 845
 United Nations Scientific Committee on the Effects of Atomic Radiation, 928
 United States, immigration laws of, 614
 Universe, expansion of, 133
 University of Chicago, and Committee on Mathematical Biology, 725
 University of Colorado, and institute for Solar-Terrestrial Research, 835
 University of Michigan, and survey of science news reading habits, 95, 708
 University of Wisconsin, and training of science writers, 720
 Uranium, coffinite as major mineral of, 105; in measuring ages of rocks, 871; standards committee for isotopes of, 718
 Uranium-lead method of measuring ages of rocks, 871
 Uranium nitrate, solubility of, 1121
 Urea, and activation of bacteriophage, 891
 Urea complexes, of lithium chloride, 897
 Urine, aromatic metabolites in schizophrenic, 1029; 1078; human, metabolite of phenobarbital in, 183
 U.S. Atomic Energy Commission, 323, 659, 661, 663, 664, 667; Albuquerque Operations Office of, 452; and Committee for Uranium Isotopic Standards, 718; Division of International Affairs in, 20; and document room for records on licensing program, 366; and encouragement of privately owned processing plants, 221; and exhibits on peacetime uses of atomic energy, 541; new headquarters for, 977; and release of information to private industry, 834; and sale of isotopes, 456; and secrecy, 451
 U.S. Fish and Wildlife Service, 133
 U.S. Geological Survey, progress report of, 258; radiocarbon dates from, 442
 U.S. Public Health Service, 666; and policy on awarding grants, 651
 U.S.S.R., atomic power stations in, 1068; and conference on high-energy physics, 834; genetics in, 721; and institute for nuclear research, 626; nuclear explosion in, 833; report of physicists' visit to, 1110; and technical education, 928; and technologic secrecy, 786; visitors from, 134

V

Vaccine, against botulism bacteria, 881; for tuberculosis, 411
 Vacuum polarization, and hydrogen fine structure, 439
 Vanadium, new mineral of, 990
 Vapor pressure, 934
 Variables, logic of, 547
 Vasopressin, isolation of, 969
 Vegetation climaxes, correlated with soil, 542
 Venereal disease, 318
Venus mercenaria, population redistribution of, 992
 Venus, signals from, 1111
 Veterinarians, report of conference of, 192

Viadril, effect of enzymatic detoxification mechanism on, 940
Vicia, in studies of postirradiation anaerobiosis, 139
 Viremia, in poliomyelitis, 1151, 1154
 Virus, cereal crop diseases caused by, 367; cork, 1034; crystal structure of turnip yellows, 849; molecular bases of parasitism of some bacterial, 54, 653; pantropic, 1155; polio, 1151; purification and crystallization of Coxsackie, 1037; Rous sarcoma, 1073; structure of influenza, 1101
 Vision, chemical theory of retinal, 150; study of, 668
 Vitamin A, and vision, 150
 Vitamin B, and effect on cell growth, 457
 Vitamin B₁₂, in marine mud, assay of, 1071
 Volcano, eruption of Bezymyanny, 21

W

Wallen, I. E., 258
 Warner, E. F., retired, 136
 Wasp, effect of radiostrontium on, 141
 Water conditioner, 1099, 1107
 Water, conversion of sea, 218, 789; in oat seeds, 1125
 Water heater, solar, 827
 Water resources, 666; international cooperation on, 717
 Water-vapor analyzer, 453
 Weather, robot marine station for collecting data on, 717
 Weidlein, E. R., retired, 627
 West Indies, geologic and ecologic survey in, 1025
 Western Association of Physicians, first meeting of, 424
 Westinghouse Electric Corporation, and super permanent magnet material, 1165
 Whale, baleen, recording of sounds of, 834
 White House Conference on Education, 85
 Whitefish, nitrogen in swimbladder of, 59
 Wisconsin glacial stage, 167, 355, 1062
 Women, mortality from heart disease among, 977
 Wood, dating of, in establishing chronology of glaciation, 355
 World Health Organization, 366, 922
 World Meteorological Organization, 976

X

Xerosin, in inhibiting virus-induced Rous sarcoma, 1073
 X-ray, and electron microscope, 370; protonuclear fusion affected by, 139; protection against postirradiation effects of, 1081

Y

Yellow fever, and *Haemagogus* in the United States, 634

Z

Zeeman effect, 207
 Zinc, new arsenate of, 1039
 Zirconium, procurement of, 980
 Zoology, contributions of C. R. Moore to, 496; nomenclature in, 23, 884, 931, 1115
 Zoonoses, and invasion of human body, 94
 Zygotes (*Fucus furcatus*), effect of polarized light on egg of, 1081

