A. M. D. G.

BULLETIN

of the

American Association of Jesuit Scientists

Eastern States Division

(Founded 1922)

(for private circulation)



Published at

BOSTON COLLEGE
Chestnut Hill, Massachusetts

Bulletin of the American Association of Jesuit Scientists

EASTERN STATES DIVISION

Vol. XXXI

MAY, 1954

No. 4

OFFICERS OF THE ASSOCIATION

President, REV. THOMAS J. SMITH, S.J. Holy Cross College, Worcester, Mass.

Secretary, Rev. Joseph F. Mulligan, S.J. Woodstock College, Woodstock, Md.

Treasurer, REV. EDWARD B. BERRY, S.J. Fordham University, New York, N. Y.

Editor-in-Chief, Rev. John J. McCarthy, S.J. Boston College, Chestnut Hill, Mass.

CHAIRMEN AND ASSOCIATE EDITORS

Biology, Rev. George F. Lawlor, S.J. Boston College, Chestnut Hill, Mass.

Chemistry, Rev. VINCENT F. BEATTY, S.J. Loyola College, Baltimore, Md.

Mathematics, Rev. CHARLES J. LEWIS, S.J. 125 Governor St., Providence, R. I.

Physics, Rev. WILLIAM G. GUINDON, S.J. Boston College, Chestnut Hill, Mass.

Science and Philosophy, Rev. Merrill F. Greene, S.J. Weston College, Weston, Mass.

NOTICE TO AUTHORS

Manuscripts are to be submitted to associate editors of the appropriate section and may be submitted directly to the editor in chief. Clear manuscript, preferably typed, with wide margin to the left, with double spacing between lines, is desirable. Please try to follow the typographical style of the most recent issue of the BULLETIN. Line drawings should be submitted on Bristol board, or similar material, and done in India ink. Figure number should be written on this in pencil. Titles for drawings, with figure numbers, should be typed on a separate sheet. Please try to minimize footnotes. Appended references and bibliographies, clearly so marked, should be done in the style of the A.A.A.S. publication, Science.

FOREWORD

In October, 1949, a comprehensive "Index of Subjects" for Volumes one to twenty-five of the JESUIT SCIENCE BULLETIN was published. This index was the work of a committee composed of Rev. Bernard A. Fiekers, S.J., as chairman, and three scholastics (now priests), Robert O. Brennan, S.J., Frederick L. Canavan, S.J., and Joseph F. Mulligan, S.J. To the untiring work of these members the Association owes a debt of gratitude. The foreword of the index closed with the following sentence, "It is to be hoped that cumulative indexes will be published in the future at five or ten volume intervals." The present five year index is a fulfillment of this hope. This index, however, is not the work of a committee but of one individual, the Rev. Bernard A. Fiekers, S.J., Chairman of the Department of Chemistry at Holy Cross College. In fact, all the indexes published during the tenure of the present editor have been due to the interest and zeal of Fr. Fiekers. For his unflagging interest in the BULLETIN and for the generous expenditure of his time and energies in compiling the many indexes, the editor and, I am sure, the whole Association wish to express a sincere thanks.

REV. JOHN J. McCarthy, S.J., Editor

Boston College Chestnut Hill, Mass.

Index of Authors, Titles and Subjects 1948-1953 Vols 26 - 30 Incl.

LEGEND. ABS, Abstract; AUTH, Author; BRev, Book Review; MRev, Movie Review; OBIT, Obituary. Volume numbers are in italics.

A

AAAS. Jesuit membership in the, 26,

Absolute zero. Measurement of temperature in the vicinity of, 26, 30 Abstract algebra. Least common mul-

tiple. An application of, 26, 97
Acceptable philosophy of science. To-

wards an, 28, 74

Acetylene flame. The oxy, MRev 28,

Achievement and promise in virus research. ABS 26, 152

ACIDS & BASES. in first year chemistry? What should be taught concerning, ABS 28, 20; Proposed symposium of Chemistry Section. Theories of, 27, 134-137; titration in non-aqueous solvents, by Jas. S. Fritz, BRev 30, 71

Adaptation of Paramecium caudatum to sea water. ABS 29, 18

Address. See Presidential addresses.
Adipic acid and its derivatives. 26, 49
Adsorption of gases on tungsten. The
measurement of vacuum pressure by

the study of, ABS 29, 34 Advances in chromosome research. Re-

cent, ABS 27, 121
Aetherial prophecy (ether). 29, 158
AGITATION & STIRRING. Chemistry laboratory hints. 27, 94; in organic chemistry (notice). High

speed, 26, 151 Agricultural school at Angers (France) (notice). 26, 151

Ahern, S.J., 1877-1951. Rev. Michael J., OBIT 29, 41, 43

Alanine. Isoelectric point of glycocoll and alpha, ABS 26, 153

Alchemists, founders of modern chemistry. ABS 27, 157

ALGEBRA. Least common multiple, an application of abstract, 26, 97; Method of teaching word problems in, 26, 25 Alkyl bromides. Laboratory preparation of normal, ABS 26, 154

Alligation methods in chemical and pharmaceutical problems. 27, 62, 129

Alumni, 1936-1945. Doctorates in the natural sciences earned by Jesuit, 26, 116

Amniotic fluid and baptism. 26, 76
ANALYSIS. Application of vector,
ABS 26, 23; course. Elementary
chemistry, ABS 30, 15; Mathematical, ABS 26, 22; of nickel. Multiple equilibrium in the volumetric,
ABS 29, 23; Notes on dimensional,
ABS 27, 142; of plastics. Qualitative
(chem), ABS 27, 93; Qualitative
(chem), 28, 128; Quantitative
chem. Gravity precipitation in the
preparation of KMnO4, ABS 27, 130;
System of dimensional (math), 27,
18; see also errors, volumetric, crystalline.

Anautogeny in the Culex pipiens. Autogeny and, ABS 30, 14

Angers, France (notice). Agricultural school, 26, 151

Angular distribution studies and nuclear energy levels. ABS 28, 26

ANNIVERSARY (ies), in 1949. Scientific, 26, 72; volume, Jesuit Seimological Association. BRev 28, 70

Annotated bibliography of the use of organolithium compounds in chemical syntheses (notice). 27, 76

Annual meeting. See ASSOCIATION.
ANTHROPOLOGY. The synthetic theory of evolution. 29, 47, 80;
Texepan man. 26, 118; see also ARCHEOLOGY.

Anti-histamines. The cold war in, ABS 27, 160

Apollonius at Erlangen (math). 27, 99 Apostolate of the Society of Jesus. Scientific, 30, 59 APPARATUS. Home-made photographic copying, ABS 27, 130; Old litmus paper vials (graduated cylinders), 27, 137; Simple bridge balance indicator for conductance measurements. ABS 27, 100. See also electronic, temperature, thermistor etc.

APPLICATION(s). of physics and chemistry to modern biological research. 30, 122; of ultrasonics. Chemical, ABS 26, 18; of vector analysis, ABS 26, 23

Applied mathematics. ABS 26, 20 Archeology at the Martyrs' Shrine, Auriesville, N.Y. 30, 11

Armchair pilot plant. Physical chemistry, the, ABS 26, 16

Arts curriculum. Mathematics, a course in the liberal, ABS 29, 28

ASSOCIATION (this). Annual meetings: program, presidential address, secretary's report: 23rd, College of the Holy Cross, 1948, 26, 4ff; 24th, Fordham University, 1949, 27, 163ff; 25th, Georgetown University, 1950, 28, 4ff; 26th, Boston College, 1951, 29, 4ff; 27th, Fordham University, 1952, 30, 4ff; by French Jesuits. Appraisal of THIS, 28, 104;

(Proposed) revised constitutions of THIS, 28, 38; Membership of THIS, 1948-9, 26, 32; 1949-50, 27, 163; 1952-3, 30, 104

Astronomical appreciation of the Gregorian calendar, ABS 27, 157

ASTRONOMY. Colors of 24 cepheids of the Crux Carina region. ABS 29, 35; Father Grimaldi, S.J. and the principle of diffraction. ABS 28, 28; Georgetown spectrograph, 28, 24; Holy Cross Observatory, 26, 103; International Union of (notice), 26, 135; Milky Way. 28, 9; Period of RT Aurigae. ABS 28, 27; Photographic magnitude of stars brighter than 7th.75. ABS 27, 159; Secchi, S.J. and solar research, ABS 29, 36; Secchi, S.J. and stellar spectra. ABS 27, 140

Ateneo de Manila requests backruns of scientific journals (notice). 27, 31 Atom bomb on Hiroshima. 30, 100

ATOMIC AND MOLECULAR. ORbitals. A discussion of covalence. ABS 30, 16; problems. Some applications of Fermi-Dirac statistics to, 29, 31, 149

to, 29, 31, 149 Auriesville, N.Y. Archeology at the Martyrs' Shrine, 30, 11

B

Bacteria. Evaluation for evidence of sex in, 29, 136

Bagdad College. New science building. 28, 132

BAL. British anti-Lewisite. ABS 26, 152

Balance. Sensitivity, sensibility and the (chemical), 26, 57

Balancing equations in chemistry. Note on (redox), 28, 121

Balzano, 1781-1848. Bernard, 26, 53 Baptism. Amniotic fluid and, 26, 76 Barry. Thos. D., AUTH 27, 15; 28,

Bases. See acids and bases.

Battery. Lifetime, ABS 27, 159
Beatty. Rev. Vincent F., AUTH 27,

Berry. Rev. Edw. B., AUTH 26, 22; 28, 38; 30, 8

Bezuszka. Rev. Stan. J., AUTH 27, 18, 142

BIBLIOGRAPHY (ies). in chemistry, II. List of recent, 26, 95; of chemistry textbooks in the Spanish & Portuguese. 27, 11; of magnetostriction (notice). 26, 29; of ultrasonics. Brief, 26, 29; of the use of organolithium compounds in chemical syntheses (notice). 27, 76

Binding in graphite. Interlayer, ABS 30, 28

BIOCHEMICAL. genetics. Recent aspects of, ABS 29, 19; preparations. BRev 27, 159 Biography. See history, obituary etc.

Biography. See history, obituary etc. BIOLOGICAL. Latin & Greek. Introduction to, BRev 27, 160; research. Application of physics & chemistry to modern, 30, 122

The new, ABS 26, BIOLOGY. 14; Philosophy of, ABS 26, 15; Symposium on graduate studies in, ABS 26, 14. See also Parthenogenesis, physiology etc.

Bioluminescence. 26, 79

BLOOD. groups. Genetics of the Rh, ABS 27, 122; Individuality of the, ABS 28, 17

Blum. John L., AUTH 26, 47 Bonet. J. B., AUTH 29, 21, 149 Boscovitch, S.J. Roger, by H. V. Gill, S.J., BRev 26, 152

BOSTON COLLEGE. 26th annual meeting of THIS ASSOCIATION, 1951, 29, 4ff; News items: 27, 67ff; 153, 155; 28, 64f; B.C. (Weston) Seismological Observatory. 30, 143; Physics Society. Journal of the, ABS 27, 160; Physics Department, 1860-1950. Changes in the, 28, 135; Pre-Medical Bulletin (The Scope), ABS 27, 161

Boston College High School. News items. 28, 100

Brennan. Rev. Robt. O., AUTH 26,

28, 32; 27, 139; 28, 62; 29, 32, 143; 30, 28.

Bridge balance indicator for conductance measurements. ABS 27, 100

Brief on the purification of organic solids. Teaching, 27, 65; review of slide rules currently available. 27

British anti-Lewisite, BAL. ABS 26. 152

Brock. Rev. Henry M., AUTH 26. 30, 136; 28, 132; Dedication: 75th Birthday. 28, 108

Bromine ampoules as powder funnels

Brookhaven Nat'l Laboratory, ABS 30, 24

Brosnan, S.J., 1860-1948. Rev. John A. S., OBIT 26, 99

Brown, S.J. Rev. Robt. E., OBIT 26, 100

BULLETIN. de liaison entre scientifiques, S.J. 26, 43; Mailing list of THIS (notice), 28, 105; Report on the 25 volume index of THIS,

Busam. Rev. Jos. F., AUTH 27, 120

C

Calendar. Astronomical appreciation of the Gregorian, ABS 27, 157

Campbell. W. G., AUTH 29, 28; 30, 21

Campion College. News Items. 26. 106

Campylum. Effect of cholesterol on the growth of Colpydium, ABS 27, 36; ABS 30, 14

Canavan. Rev. Fred. L., AUTH 26, 28, 32, 154; 28, 26; 30, 32

CANISIUS COLLEGE. herbrarium. 26, 47; Kircher Review (biol). 27, 158; News Items, 26, 70f, 106

Carbohydrates and lipids. 29, 122 CARBON. dioxide. Wave functions and ionization potentials for the ground state of, 28, 131; monoxide quantitatively demonstrated. Lethal effects of, 29, 113

Carmody, F. R., AUTH 29, 36

Catenary (math), 27, 15

CATHOLIC. chemists. notes on, ABS 26, 154; graduate courses in physics. 26, 150; physiographers Notes on, ABS 26, 154; science notes (former C RTS). 30, 141.

Centigrade and Fahrenheit interconversions. 27, 71

Centripetal force. New experimental method for the determination of, ABS 26, 28

Cepheids of the Crux Carina region. Colors of 24, ABS 29, 35

Changes in the Boston College Physics Department, 1860-1950. 28, 135

Chatard. J. A., AUTH 27, 130

CHEMICAL. Applications of ultrasonics. ABS 26, 18; equilibrium. History of, 30, 89; journals. Requests for back issues of, 27, 31,

112; laboratory hints. 27, 12; literature, by G. M. Dyson. Short guide to the, BRev 29, 159; and pharmaceutical problems. Alligation (math) methods in, 27, 62, 129; (problems) System of stoichiometry. 27, 62, 129; rate expressions. Exponents appearing in, 26, 93; 27, 64: research at Loyola College, Madras, India. 28, 104; research in some of our liberal arts colleges. 27, 156; structure and tumor development. ABS 30, 17; structure. Variable valence and, 28, 52; syntheses. Annotated bibliography of the use of organolithium compounds in, 27, 76

CHEMISTRY. Alchemists, founders of modern, ABS 27, 157; the armchair pilot plant. Physical, ABS 26, 16; II. Bibliography. List of recent, 26, 95; of the College of the Holy Cross II. Survey of publications in the department of, 28, 138; Copper in organic, ABS 27, 98; (Advanced) freshman course in, ABS 26, 152; High speed agitation and stirring in organic (notice), 26, 151; laboratory. Graham's law of gaseous diffusion in the, 30, 93; laboratory hints. 27, 94; lecture experiments in high school, ABS 26, 17; libraries. Journals for the physics and, 28, 96; to modern biological research. Application of physics &, 30, 122; Relation of molecular to electronic structure in, 30, 127; Multiple equilibrium in, 30, 92; Note on balancing (redox) equations in, 28, 121; Notes on preparatory work for college, 27, 59; Notes on teaching the Grignard synthesis in, 28, 92; Preferred syntheses in organic, 26, 85; syllabus. High school, ABS 26, 19; Syllabus of lecture demonstrations in, 30, 63; Teaching isomerism in organic, 27 12; Textbooks in the Spanish & Portuguese. Bibliography of, 27, II; Undergraduate research program in, 28, 20; What should be taught in acids and bases in first year? ABS 28, 20 China. Their scientific work. The

Jesuits in, 27, 143

Cholesterol on the growth of Colpydium Campylum. Effect of, ABS 27, 36; ABS 30, 14

Chromosome research. Recent advances in, ABS 27, 121

(Athanasius Kircher). ABS 27, 157 Churchmen Ciliary (protoplasmic) movement, ABS 27, 157

ark. Rev. Jos. T., AUTH 28, 74; 29, 31, 59, 85; 30, 27, 40 Clark.

Classics of science. Jesuit, 29, 74 Cohalan. Rev. J. F., AUTH 27, 138 Colchicine on the metamorphosis of Culex pipiens. Some effects of, ABS 29, 17

Cold war in anti-histaminics. ABS 27, 160

Coleran. Very Rev. Jas. E., AUTH 30, 59

COLLEGE. chemistry. Note on preparatory work for, 27, 19; teaching in the physical sciences, by Sir H.S. Taylor. Religious perspectives of, BRev 29, 75

Collegiate mathematics in first year. Proposed revision of, ABS 26, 25

Colloidal & crystalline state of the same substance. Simple demonstration of the, ABS 27, 128

Colloquium at Weston College. Formation of the Jesuit Science, 30, 58

COLOR(s). of 24 Cepheids of the Crux Carina region. ABS 29, 35; and extinction correction in photographic photometry. Distance, ABS 30, 33; in psychophysics, Size, distance, shape and, ABS 27, 138; and structure of organic molecules. ABS 27, 140

Colorimeters. Relative merits of various (notice), 26, 96

Colpydium campylum. See cholesterol. Compass. Examples of Wentzel's method for determining the possibility of geometrical construction with straightedge and, ABS 30, 21

COMPLEX. compounds of copper. ABS 27, 98; number. Common origin of real and, 26, 133; number. Note on the square root of a, 27,

Conditions. Necessary and sufficient, 29, 139

Simple Conductance measurement. bridge balance indicator for, ABS 27, 100

CONDUCTIVITY. demonstration. Multipurpose, ABS 27, 160; for freshmen. 27, 94

Conductors. Semi-, 30, 136, ABS 28; erratum, 31, 32

Congruences (math). 30, 134

Constitutions of THIS ASSOCIA-TION. Revised, 28, 38

CONSTRUCTION (new). Bagdad
College Science Building. 28,
122; Boston College High School.
28, 100. See also news items for
such as H.C. Biol. bldg., astronomy
observatory, chem. stock room etc.

Continued fractions. Matrices and, 26, 132

Convergence of an infinite series of positive terms with proof. Test for, 26, 54

CONVERSION(s). Fahrenheit-Centigrade inter-, 27, 71; and use of war surplus for laboratories. 26, 78, 149

CO-OPERATIVE. major in electronics. Curriculum problems in the five year, ABS 29, 35; physics tests at Georgetown. ABS 27, 138

COPPER. inorganic chemistry. ABS 27, 98; Story of, MRev 30, 72

Copying apparatus. Homemade photographic, ABS 27, 130

Cosmic noise at radio frequencies. Solar and, 26, 141

Cosmology. Science and creation. 27, 80

Coupled systems in physics. Some, ABS 27, 139 COURSE. in chemistry. Advanced freshman, ABS 26, 152. Some notes on the elementary chemical analysis, ABS 30, 15; in physics. A high school, ABS 29, 36; see also curriculum, syllabus.

Covalence. A discussion of, ABS 10,

Creation. Science and, 27, 80

Creighton Univ. News Items. 26, 106 Crux carina region. Colors of 24 Cepheids in the, ABS 29, 35

Crystalline state of the same substance. Simple demonstration of the colloidal and, ABS 27, 128

Culex pipiens. Some effects of colchicine on the metamorphosis of the, ABS 29, 17; Autogeny and anautogeny in the, ABS 30, 14

Current nuclear physics. 26, 58; 27, 23, 103

CURRICULUM. Catholic graduate courses in physics, 26, 150; Mathematics, a course in the liberal arti. ABS 29, 28; Notes on preparatory work for college chemistry. 27, 59; in physics. Questionnaire on a bachelor of science, ABS 26, 26; problems in a five-year co-operative major in electronic physics. ABS 29, 35; Symposium on graduate studies in biology. ABS 26, 14f; see also syllabus.

Cytological study of several species of Hosta. ABS 29, 22

D

Dawson. W. A., AUTH 27, 59

Death. Senescence and, 27, 86

Decomposition of hydrocarbons. Radiation induced, ABS 29, 25

DeLaak, S.J. Rev. Henry J., OBIT 26, 151

Delaney. Rev. John P., AUTH 30, 31

DEMONSTRATION(s). in acid base theory. 27, 137; in chemistry. A syllabus of lecture, 30, 63; of the colloidal and crystalline state of the same substance. Simple, ABS 27, 128; Illustration of (gas) kinetics by means of shadow projection.

ABS 26, 17; Lecture experiments in high school chemistry. ABS 26, 17; Multipurpose conductivity, ABS 27, 160; see also visual education.

Descartes La Geometrie. Notes on, ABS 29, 28

Determinant (math). Evolution of the, ABS 26, 24

Deuteron. New tensor model of the, ABS 26, 27

Devane. Rev. John F., AUTH 26, 30 Devlin. Rev. Jas. J., AUTH 30, 32

Diagnostic principles in organic syntheses. I. aliphatic, 26, 18; II. aromatic, 26, 86

DIFFERENTIAL(s) (math). Notes on the, ABS 30, 23; equations. Applications of, ABS 26, 22

Difficulties and methods of teaching nuclear physics. ABS 28, 26 Diffraction. Father Grimaldi, S.J. and the principle of, ABS 28, 28

Diffusion in the chemistry laboratory. Graham's law of gaseous, 30, 93

Dillemuth. Fred. J., AUTH 26, 20 Dilution problems. A modification of Pearson's square method for solving, ABS 29, 25; 27, 62, 129

Dimensional analysis. 27, 18, 142

Discussion of pre-medical problems. ABS 28, 16

DISTANCE. color and extinction correction in photographic photometry. ABS 30, 33; shape and color in psychophysics. Size, ABS 27, 138

Doctorates in the natural sciences earned by Jesuit alumni, 1936-45, 26, 116

Drury. Rev. Geo. L., AUTH 26, 14 Duffy. G. A., AUTH 27, 130; 29, 25

E

Eclipse. Geodetic measurement by

means of a solar, 30, 67, ABS 31
EDUCATION. and human values.
Science, ABS 27, 162; Industrial,
ABS 27, 158; On pre-medical, 27, 122; What is good supervision? ABS 26, 154. See also curriculum, course, teaching, syllabus, etc.

Egan. Rev. Thos. F., AUTH 26, 19 Egan, W. F., AUTH 26, 25

Eiardi. Rev. Anth. J., AUTH 26, 20; 29, 120

Elastic body. The theory of finite strain in an, 29, 153, ABS 26 Electrical units. New, 26, 30

ELECTRO-, conductivity for freshman laboratory in chemistry. 27, 94; magnetic field. The statistics of the, ABS 29, 32; motive force cells in chemistry. Problems in (EMF), ABS 26, 17

ELECTRONIC, device for precise temperature regulation, 27, 96; Curriculum problems in a five-year cooperative major in, ABS 29, 35; structure in chemistry. The relation of molecular to, 30, 127

Elementary analysis course in chemis-

try. ABS 30, 15 Embryo. Evolution of the, ABS 26,

Eminent physicist? Who was the, 26,

Enzymes in protozoa. ABS 29, 69 Epistemological interpretation. Heisenberg's principle. An, 26, 40, ABS

Equations in chemistry. Note on balancing (redox), 28, 121

EQUILIBRIUM (chemical). History of chemical, 30, 89; in chemistry. Multiple, 30, 92; Symposium on, ABS 29, 22; see also: first year, free energy, nickel, rates, secondary school and volumetric etc.

Erlangen (math). Apollonius at, 27,

Error in volumetric analysis. Double indicator titrations. II. Limits of, 28, 117

Etching from glass. Removing fluoride, 30, 95

Ether. Aetherial prophecy. 29, 158 Euclidean geometer. Girolamo Saccheri, S.J., non, ABS 26, 153

Evidence for sex in bacteria. Evaluation of, 29, 136

EVOLUTION. of the determinant (math). ABS 26, 24; of the embryo. ABS 26, 15; Synthetic theory of, 29, 47, 80

Ewing. Rev. J. Franklin, AUTH 26, 118; 29, 47, 80; 30, 11, 13

Experimental physiology. Lazzaro Spellanzani, founder of, ABS 27, 159

EXPERIMENT(s). Horse power, 28, 132; on the parthenogenesis of the rabbit ova. Technique employed in, ABS 27, 120; see also Graham's law, adipic acid, etc.

Exponential functions. Relation between trigonometric and, 29, 143 Exponents appearing in chemical rate expressions. 26, 93 Extinction correction in photographic photometry. Distance, color and, ABS 30, 33

F

Faculties of New England (Catholic) colleges at mid-century. A statistical review. Science, 29, 72

Fahrenheit-Centigrade interconversions, 27, 71

Fairfield University. News Items, 26, 105, 158; 27, 112; 28, 69

Feeney. Walter J., AUTH 26, 54; 30, 18

Fellowships (for teaching sciences) available at Mass. Inst. Tech. Westinghouse, 30, 97

Fermi-Dirac statistics to atomic and molecular problems. Some applications of, 29, 149, ABS 31

Fickers. Rev. B. A., AUTH 26, 8, 17, 29, 32, 49, 52, 57, 72, 85, 86, 93, 95, 96, 99, 100, 101, 116, 149, 151; 27, 11, 35, 62, 64, 65, 73, 74, 76, 93, 94, 98, 100, 111, 129, 137, 156, 157, 162; 28, 52, 65, 69, 92, 104, 117, 121, 128, 138; 29, 22, 24, 43, 72, 74, 159; 30, 63, 70, 71, 89, 92, 93, 95, 100, 127, 141

FILM REVIEWS. Phosphorus, key to life, MRev 26, 52; The story of copper. MRev 30, 72

Filtration in the preparation of KMnO4. Gravity, ABS 27, 130 Finite strain in an elastic body. The

theory of, 29, 153, ABS 26

FIRST YEAR (COLLEGE). chemistry? What should be taught concerning acids and bases in, ABS 28, 20; chemistry. Equilibrium in, ABS 29, 23; Proposed revision of collegiate mathematics in, ABS 26, 25; see also freshman, syllabus etc.

Fischer. Jas. J., AUTH 29, 28; 10, 21 Five-year co-operative major in electronic physics. Curriculum problems in a, ABS 29, 35

Flask heaters. 27, 12

Fluorine etching from glass. Removing, 30, 95

FORDHAM UNIVERSITY. 24th Annual meeting held at, 27, 116ff; 27th meeting, 30, 4ff; NEWS ITEMS: 26, 102; 27, 112, 153; 28, 67; Review; Paradoxes of the Infinite. BRev. 27, 161; Rev. F. W. Power Memorial Award, 27, 74

Forelimb regeneration in the salamander. 27, 125

Form. Problems of race and, ABS 30,

Forty years of research on liquids. ABS 27, 158

Fractionating column. What would you have done (to pack a), 27, 69 Fractions. Matrices and continued

26, 132
Free energy. (Chemical) equilibrium

and, ABS 29, 23
French Jesuits. Appraisal of THIS

ASSOCIATION by, 28, 104
Frequencies. Solar and cosmic noise at

radio, 26, 141
Freshmen in chemistry. Conductivity

for, 27, 94

Frisch. Rev. John A., AUTH 26, 47; 29, 18

Functions. Relation between trigonometric and exponential, 29, 143

G

Galileo's visit to Rome. 30, 112 Gas trap for HBr. 27, 12 Gaseous diffusion in chemistry laboratory, Graham's law of, 30, 93 Gausz on plus or minus. ABS 30, 19

GENETICS. Recent aspects of biochemical, ABS 29, 19; Revaluation of Soviet, 27, 40; of the Rh blood groups, ABS 27, 122

Geodetic measurements by means of solar eclipse. 30, 67; ABS 31

GEOLOGIC(al). history. Time scale Subsurof, 28, 58; methods. face, 27, 162. See also seismology

Geology of New England. 30, 82

Geometer. Girolamo Saccheri, S.J., non-Euclidean, ABS 26, 153

GEOMETRIC(s, al, etc.). construction using compass and straightonly (alone). Wantzel's method for the determination of the possibility of, ABSTRACTS 30, 21. Applications of, ABS 26, 22; Theorem in, (isosceles triangle), 29, 147

GEORGETOWN UNIVERSITY. 25th Annual meeting of THIS ASSOCIA-TION, 1950. 28, 4ff; Co-operative physics tests at, ABS 27, 138; News items: 26, 107; 28, 68; Photography with the solar spectrograph at, ABS 30, 32; Spectrograph. 28, 24

German science chats. Zoologische Plaudereien, by Rev. F. Heselhaus, S.J. BRev, 27, 162

Glass. Removing fluorine etchings from, 30, 95

Glycocoll and alpha alanine. Isoelectric points of, ABS 26, 153

Good supervision? What is, ABS 26, 154

GRADUATE. courses in physics. Catholic, 26, 150; studies in biology. Symposium on, ABS 26, 14; Graduated cylinders from litmus vials. 27, 137

Graham's law of diffusion in the chemical laboratory. 30, 93

Graphite. Interlayer binding in, ABS 30, 28

GRAVITY. filtration in the preparation of KMnO4. solutions. ABS 27, 130; Historical note on (philos), 26, 112

Greek, by Rev. P. H. Yancey, S.J. Introduction to biological Latin and, BRev 27, 160

Green. John W., AUTH 26, 23; 29, 139; 30, 134

Gregorian calendar. Astronomical appreciation of the, ABS 27, 157

Grignard synthesis in chemistry. Notes on the, 28, 92

Grimaldi, S.J. and the principle of diffraction. Father, ABS 28, 28

Ground state of CO2. Wave functions and ionization potential for the, 28, 131

Growth of the Colpydium Campylum. Effect of cholesterol on the, ABS 27, 36; ABS 30, 14

Guay. Rev. Leo J., AUTH 28, 122 Guidance (vocational). Industrial education. ABS 27, 158

Guindon. Rev. Wm. G., AUTH 26, 27, 43, 53; 27, 23, 103; 28; 29, 34; 30, 24

H

Haas, Rev. John N., AUTH 27, 122 Harry. A. C., AUTH 29, 21, 136 Heaters. Flask, 27, 12

Heats of methane from ultrasonic measurement. Ratio of the specific, ABS 26, 28

Heelan. P. A., AUTH 29, 26, 153 Heisenberg principle. An epistemological interpretation, 26, 40; ABS 31 Hennessey. J. J., AUTH 27, 70 Herbrarium. Canisius College. 26, 47 Heyden. Rev. Francis J., AUTH 28, 9, 24; 30, 31, 32, 67

HIGH SCHOOL. chemistry. Lecture experiments in, ABS 26, 17; chemistry syllabus. ABS 26, 19; course in physics. ABS 29, 36; Notes on preparatory work for college chemistry. 27, 59; physics. Visual aids in, ABS 29, 36

High speed agitation and stirring in organic chemistry (notice). 26,

151

Hilsdorf. Rev. Geo. J., AUTH 27, 69, 75; 28, 20; 29, 26

Hints. Chemical laboratory, 27, 12, 94

Hiroshima. The atom bomb on, 30,

Histaminics. The cold war in anti-, ABS 27, 160

Historical note on gravity, 26, 112 HISTORY. Bernard Balzano, 1781-1848. 26, 53; Changes in the Boston College physics department from 1860-1950. 28, 135; of chemical equilibrium. 30, 89; ABS 29, 22; Galileo's visit to Rome. 30, 112; Grimaldi and the principle of diffraction. ABS 28, 28; The Jesuits in China. Their scientific work. 27, 143; Jesuit classics of science. 29, 74; Jesuit Seismological Association. BRev 28, 70; Kircher Review (History of the biology department at Canisius College). ABS 27, 158; Margin of knowledge in mathematical, ABS 30, 21; Mediaeval interest in the observation of nature. 29, 73; Pasteur. His Catholicity. 28, 70; Revaluation of Soviet genetics. 27, 40; Rh factor. Its discovery and

Founder of experimental physiology, ABS 27, 159; Time scale of geological, 28, 58. See Secchi etc.

HOLY CROSS. College of the, 23rd Annual meeting of THIS ASSOCIA-TION, 1948. 26, 4ff; News items: 26, 71, 103, 104, 159; 27, 35, 73, 111, 154; 28, 65, 66, 102, 128; 30, 141; II. Survey of publications in chem. dept. at, 28, 138

HOME MADE. movies. Laboratory safety through, 26, 20; photographic copying apparatus. ABS 27, 130; see also WAR SURPLUS.

Homotopic paths. ABS 29, 29 Horse power experiment. 28, 132 Hosta. Cytological study of several species of, ABS 29, 22

Hot parts of flasks. 27, 12 Human values. Science, education and, ABS 27, 162

Hutchinson. Rev. Gerald F., AUTH 27, 94, 134, 136, 157; 28, 20; 29, 23; 30, 15

Hydrates. Solubility of, 29, 115 Hydrocarbons. Radiation induced decomposition of, ABS 29, 25

HYDROGEN, spectrum. Lamb shift in the, 28, 62; sulfide reagent (thioacetamide). 28, 128

I

Illustration of kinetics by shadow projection. ABS 26, 17

recent, 26, 44, ABS 15; Spellanzani.

Index of THIS BULLETIN. Progress report on 25 vol., 26, 32

India. Chemical research at Loyola College, Madras, 28, 104

INDICATOR. for conductance measurement. Simple bridge balance, ABS 27, 100; titrations. Limits of error in volumetric analysis. Double, 28, 117

Individuality of the blood. ABS 28,

Industrial education. ABS 27, 158

INFINITE. series of positive terms with proof. Test for the convergence of, 26, 54; upper limits. Integrals with, 28, 129

Insulation. Metal foil, 27, 12

Integrals with infinite upper limits. 28, 129

Interconversions. II. Fahrenheit-Centigrade, 27, 71

Interlayer binding in graphite. ABS 30, 28

International Union of Astronomy. 26, 135

Introduction to Biological Latin and Greek, by Rev. P. H. Yancey, S.J. BRev 27, 160

Ionization potential for the ground state of CO₂. Wave function and, 28, 131

Isoelectric points of glycocoll and alanine. ABS 26, 153

Isomerism in organic chemistry. Teaching, 27, 12

Isosceles triangle, 29, 147

Isotopes. See Current nuclear physics.

JESUIT (s). alumni, 1936-1945. Doctorates in the natural science earned by, 26, 116; in China. Their scientific work. 27, 143; Classics of science. 29, 74; Science Colloquium at Weston College. Formation of the, 30, 58; Scientific apostolate of the Society of Jesus. 30, 59; Seismological Association. BRev. 28,

70; see also history, obituary, etc. John Carroll University. News items. 26, 99, 107, 160

JOURNAL(s). of the Boston College Physics Society. ABS 27, 160; for physics and chemistry libraries. 28, 96; Requests for back issues of, 27, 31, 76, 112

K

Kelly, Rev. Jos. P., AUTH 26, 31, 40, 112; 27, 80, 85; 28, 16, 38, 43; 29, 41, 73

Kilmartin. Edw. J., AUTH 26, 18;

Kinetics by shadow projection. Illustration of, ABS 26, 17

KIRCHER, S.J. Rev. Athanasius (saec xvii). Churchmen famous in

medicine. ABS 27, 157; Review (Canisius College). ABS 27, 158; Jesuit Classics of Science. 29, 74

Knowledge in mathematical history. Margin of, ABS 30, 21

Koehler. C. Fred., AUTH 26, 97

Koenig, S.J. 1906-1946. Rev. Lothar, OBIT 26, 100

de Kort. J., ABS, AUTH 27, 157, 159

L

LABORATORY. The Brookhaven National, ABS 30, 24; Conductivity for freshmen, 27, 94; hints. Chemical, 27, 12, 94; practice in Xray diffraction. ABS 30, 15; Safety through home made movies. 26, 20 Lamb shift in the hydrogen spectrum. 28, 62

Landrey, Rev. Gerard M., AUTH 27, 137

Language of science. Mathematics, the, 27, 33

Laschenski. S. J., AUTH 29, 36
Latin and Greek, by Rev. P. H. Yancey, S.J. Introduction to biological,
BRev 27, 160

Least common multiple, an application of abstract algebra. 26, 97 Lecture. demonstrations in chemistry. Syllabus of, 30, 63; experiments in high school chemistry. ABS 26, 17; see also demonstration, illustration etc.

Lethal effects of CO quantitatively demonstrated. 29, 113

Lewis. Rev. Chas. J., AUTH 29, 29; 30, 23

Liberal arts colleges. Statistics on chemical research in some of "our", 27, 156

LIBRARY (ies). Journals for physics and chemistry, 28, 96; requests. 27, 31, 76, 112; see also literature journals, etc.

LIFE. in protoplasm. 28, 86; -time battery. ABS 27, 159 Light. Some recent determinations of the velocity of, ABS 30, 30

LIMITS. of error in volumetric analysis. Double indicator titrations. 28, 117; Integrals with upper, 28, 129; Safer and simpler (math), ABS 29, 26

Linehan. Rev. Dan., AUTH 27, 162; 30, 143

Lipids. Carbohydrates and, 29, 122 Liquids. Forty years research on, ABS 27, 158

Literature by G. M. Dyson. Short guide to the chemical, BRev 29, 159; see also bibliography, journal, library.

Lithium compounds in chemical syn-

thesis. Annotated bibliography on the use of organo-, (notice), 27, 76

Litmus paper vials for graduated cylinders. 27, 137

Logical structure of physical science, 30, 40, ABS 27

Logistic system (in math). The notion of a, ABS 30, 18

Loyola College, Baltimore, News items: 26, 107; 27, 155

Loyola College, Madras, India. Chemical research at, 28, 104

Loyola University, Chicago, Ill., News Items: 26, 107

Loyola University, New Orleans, La., News items: 26, 160

Luminescence. Bio-, 26, 79

M

MacCormack. Rev. Anth. J., AUTH 26, 24

MacDonnell. Rev. Robt. B., AUTH 26, 26

MacEntee. Frank J., AUTH 26, 15 Magnetostriction (notice). Bibliogra-

phy of, 26, 29

Magnitude of stars brighter than 7^m.75. ABS 27, 159

Man. Texepan, 26, 118

Marasigan. Rev. Vincente, AUTH 28, 27; 29, 36; 30, 76 Margin of knowledge in mathematical

history. ABS 30, 21 Maring, S.J., 1883-1943. Rev. Albert,

Maring, S.J., 1883-1943. Rev. Albert, OBIT 26, 101

MARQUETTE UNIVERSITY. News items: 26, 107; High School. 26, 161

Martus, S.J. Rev. Jos. A., AUTH 26, 17; 27, 71, 130; 28, 70

Martyrs' Shrine, Auriesville, N.Y. Archeology at the, 30, 11

Mass action. Exponents appearing in rate expressions. 26, 93

Massachusetts Institute of Technology. Westinghouse science teacher fellowships at, 30, 97

Masterson. Wm. K., AUTH 26, 15, 44; 27, 122; 28, 17

MATHEMATICAL. analysis. Applications of, ABS 26, 22; history. Margin of knowledge in, ABS 30, 21 MATHEMATICS. Apollonius at Erlangen. 27, 99; Applied, ABS 26, 20; a course in the liberal arts curriculum. ABS 29, 28; in first year. Proposed revision of, ABS 26, 25; the language of science. 27, 33

Matrices and continued fractions, 26,

Matter. Structure of, BRev 26, 154; Vitreous state of, ABS 27, 128

Maze. K.C.M.G., K.B.E. Sir Frederick, AUTH 27, 143

McCarthy. Rev. Martin F., AUTH 27, 140; 28, 28; 29, 35; 30, 33 McGuinn. Rev. Alb. F., AUTH 26.

76; 27, 12, 96; 128, 159; 29, 23 Measurement of temperature in the vicinity of the absolute zero. ABS

26, 30 Mechanical units to students of elementary mechanics. Method of teaching, ABS 26, 31

MEDICAL. See pre-medical.

Medicine. Athanasius Kircher. Churchmen famous in, ABS 27, 157

Mediaeval interest in the observation of nature. 29, 73

Meetings of THIS ASSOCIATION. See ASSOCIATION.

MEMBERSHIP. in the Am. Association. Adv. Sci. (AAAS) 26, 116; in THIS ASSOCIATION, see ASSOCIATION.

Memorial award. A Father F. W. Power, 27, 74

Mentally. Squaring numbers, 29, 146 Merrick. Rev. Jos. P., AUTH 29, 147 Mesons. 27, 23, 103

Metal foil insulation. 27, 12

Metamorphosis in Culex Pipiens. ABS 29, 17

Meteorology. Jesuits in China. 27,

Methane from ultrasonic measurement. Ratio of the specific heats of, 26, 28 Microseisms. 30, 4

MICROSCOPIC. macroscopic and submicroscopic. Structure of protoplasm, 28, 111; order. Sense perception and the, 28, 43 ABS 16

Microwave spectroscopy. ABS 28, 29 Milk. Report on the surface tension of, ABS 27, 75

Milky way. 28, 9

Miller, S.J. Rev. Carl P., OBIT 26, 149

Miller. Rev. Walt. J., AUTH 30, 112

MOLECULAR. to electronic structure. The relation of, 30, 127; orbitals. A discussion of covalence. Atomic and, ABS 30, 16; problems. Some applications of Fermi-Dirac statistics to atomic and, 29, 149, ABS 31; spectroscopy. Determination of nuclear spin and statistics by, ABS 29, 33

Molecules. Color and structure of organic, ABS 27, 140

Moral case. Amniotic fluid and baptism. 26, 76

Movies. Laboratory safety through home made, ABS 26, 20; see also acetylene, copper, phosphorus

Mulligan. Rev. Jos. F., AUTH 26, 28, 29, 32, 141, 150; 27, 140; 28, 29, 96, 131; 29, 33, 158; 30, 30, 96

Multiple equilibrium in chemistry. 30, 92; see also nickel.

Multipurpose conductivity demonstration. ABS 27, 160

Muscular (protoplasmic) movement. 27, 41

N

National Laboratory. The Brookhaven, ABS 30, 24

Natural sciences earned by Jesuit alumni. 1936-1945. Doctorates in the, 26, 116

Nature. Mediaeval interest in the observation of, 29, 73

Necessary and sufficient conditions (math). 29, 139

Nematode parasites of plants. Some, ABS 29, 20

NEW. biology. The, ABS 26, 14; electrical units. The, 26, 30

NEW ENGLAND. Catholic colleges at mid-century. Statistical review. Science faculties of the, 29, 72; Geology of, 30, 82

News items. See specific institutions, such as Boston, Canisius or Loyola College(s); Fairfield, Fordham or Georgetown Universit(y)ies. NICKEL. Multiple equilibria in the volumetric analysis of, ABS 29, 23; plate without electricity. ABS 27, 161

Noise at radio frequencies. Solar and cosmic, 26, 141

NUCLEAR. energy levels. Angular distribution studies and, ABS 28, 26; forces. Quantum mechanics and the theory of, ABS 29, 34; physics. 26, 58; 27, 23, 103; physics. Difficulties and methods of teaching, ABS 28, 26; reactions. Use of photographic emulsions in the study of, ABS 30, 32; spin and statistics by molecular spectroscopy. ABS 29, 33; shell structure. ABS 28, 28

NUMBER (s). Common origin of real and complex, 26, 133; mentally. Squaring, 29, 146; note on the square root of a complex, 27, 70 Obituaries. See names such as Ahern, Brosnahan, etc.

O'Conor. Rev. John S., AUTH 29,

O'Donnell. Rev. Geo. A., AUTH 26, 22; OBIT 29, 120

Old litmus paper vials. 27, 137

ORBITALS. Discussion of covalency. Atomic and molecular, ABS 30, 16; Relation of molecular to electronic structure in chemistry by atomic, 30, 127

ORGANIC. chemistry. Copper in, ABS 27, 98; chemistry (notice). High speed agitation and stirring in, 26, 151; chemistry. Preferred syntheses in, 26, 85; chemistry. Teaching isomerism in, 27, 12; molecules. Color and structure of, ABS 27, 140; solids. Teaching brief on the purification of, 27, 65; syntheses.

Diagnostic principles in: aliphatic. 26, 18; aromatic, 26, 86; synthesis. Adipic acid and derivative. Undergraduate, 26, 49. See also Grignard, lithium, OXO, Wurtz etc.

Organo-lithium compounds in chemical synthesis. An annotated bibliography on the use of, (notice) 27, 76

Orth. Alfred R., AUTH 26, 17 O'Shea. Edw. F., AUTH 26, 25

Ova. Technique employed in the parthenogenesis of rabbit, ABS 27, 120

Owens. J. V., AUTH 26, 15; 29, 20 OXO. Oxybomb, 27, 12; Oxo-process (organic), ABS 27, 161

Oxyacetylene flame. MRev 28, 69: oxybomb, 27, 12

Oxygen (from oxybomb). 27, 12

P

Pallace. Rev. Jas. J., AUTH 26, 16; 27, 136; 29, 23

Paradoxes of the infinite. BRev 27,

PARAMOECIUM CAUDATUM, and Peloxyma Caroleninsis. Sites of phosphatase activity in, 28, 46; to sea water. Adaptation of, ABS 29,

Parasites of plants. Some nematode, ABS 29, 20

Parthenogenesis of rabbit ova. Technique employed in experiments on, ABS 27, 120

Pasteur. His Catholicity. 28, 70

Research pays its own way. ABS 27, 85

Pearson's square method for solving dilution problems. ABS 29, 25; 27, 62, 129

Pedagogy. What is good supervision? ABS 26, 154

Peloxyma Caroleninsis. Site of phos-phatase activity in paramoecium caudatum and, 28, 46

Period of RT Aurigae (astron). ABS 28, 27

Permanganate. See potassium.

Peroxide. Safety Notice. Recrystallization of benzoyl, ABS 27, 85

Persich. Rev. J. A., AUTH 29, 146 Pharmaceutical problems. Alligation methods in chemical and, 27, 62, 129; ABS 29, 25

Philips. Rev. Edw. C., AUTH 27. 141

Philosophical implications of physical statistics. 29, 59, 85, ABS 31

PHILOSOPHY. of biology. ABS 26, 15; of science. Toward an acceptable, 28, 74; Science ventures into, 27, 85; see also creation, evolution, gravity, Heisenberg, logical, nature, sense perception etc.

Phosphatase activity. See paramoecium. Phosphorus, key to life. MRev 26, 12 PHOTOGRAPHIC. copying apparatus. Home-made, ABS 27, 130;

emulsions in the study of nuclear reactions. Use of, ABS 30, 32; magnitudes of stars brighter than 7th.75. ABS 27, 159; photometry. Distance, color and extinction correction in, ABS 30, 33

PHOTOGRAPHY. indispensable tool in physics. ABS 30, 31; with the solar spectrograph at Georgetown. ABS 30, 32

PHOTOMETRY. Distance, color and extinction correction in photographic, ABS 30, 33; in spectroscopy. ABS 30, 32

PHYSICAL. chemistry, the armchair pilot plant. ABS 26, 16; science. Logical structure of, 30, 40, ABS 27; statistics. Philosophical implication of, 29, 59, 85, ABS 27

PHYSICIST. Rev. Theodor Wulf, S.J., 1868-1946, a Jesuit, 26, 8; Who was the eminent, 26, 136

PHYSICS. Catholic graduate courses in, 26, 150; and chemistry libraries. Journals for the, 28, 96; and chemistry to modern biological research. Application of, 30, 122; some coupled systems in, ABS 27, 139; Current nuclear, 26, 58; 27, 23, 103; Curriculum in a five-year co-operative major in electronics, ABS 29, 35; department from 1860-1950. Changes in the Boston College, 28, 135; Difficulties and methods of teaching nuclear, ABS 28, 26; High school course in, ABS 29, 36; Questionnaire on the bachelor of science curriculum in, ABS 26, 26; Size, distance, shape and color in psycho-, ABS 27, 138; Society. Journal of the Boston College, ABS 27, 160; tests at Georgetown. Co-operative, 27, 138; today (journal notice). 26, 150; Visual aids in high school, ABS 29, 36

Physiographers. Notes on Catholic, ABS 26, 154

Physiology, Lazzaro Spellanzani, founder of experimental, ABS 27, 159; see also protoplasmic movement and similar topics.

Pickel, S.J., 1867-1948. Rev. Geo. J., OBIT 26, 99

Plane figures unaltered in shape. Transposition of a plane which leaves all, ABS 27, 141

Plastics. Theses on the qualitative analysis of, ABS 27, 93

Plate without electricity. Nickel, ABS 27, 161 Polarizing microscope. An inexpensive, ABS 27, 12

Portuguese. Bibliography of chemistry textbooks in the Spanish and, 27, 11

Potassium permanganate. Gravity filtration in the prepn. solns. of, ABS 27, 130

Potentials for the ground state of CO₂. Wave functions and ionization, 28, 131

Power Memorial Award. The late Rev. Francis W. (S.J.), 27, 74

Preferred syntheses in organic chemistry. 26, 85

PRE-MEDICAL. Bulletin (The Scope, Bost. Coll.). ABS 27, 161; education. On, 27, 122; problems. Discussion of, ABS 28, 16

PREPARATION. of normal alkyl bromides. Laboratory, ABS 26, 154; and properties of thioacetamide. ABS 29, 24; see also synthesis.

Preparatory work for college chemistry. Notes on, 27, 59

PRESIDENTIAL ADDRESSES. 23rd ann. meeting, Holy Cross, 1948, B. A. Fiekers on Rev. Theo. Wulf, S.J., 1868-1946, a Jesuit Physicist, 26, 8; 24th ann. meeting, Fordham, 1949, J. A. Frisch on Biological Evolution; 25th ann. meeting, Georgetown, 1950, F. J. Heyden on the Milky Way, 28, 9; 26th ann. meeting, Boston College, 1951, M. P. Walsh on Science in Soviet Russia, 29, 10; 27th ann. meeting, Fordham, 1952, E. B. Berry on Microseisms, 30, 4

Pressures of the order of 10-8 mm. Hg and lower. Technique for obtaining, 28, 30; see also tungsten.

PROBLEMS. in algebra. Method of teaching word, 26, 25; Alligation methods in chemical and pharmaceutical, 27, 62, 129; in E.M.F. cells. ABS 26, 17; of race and form. ABS, 30, 13; see pre-medical.

Programs. See THIS ASSOCIATION, symposia etc.

Projection. Illustration of kinetics by shadow, ABS 26, 17. See also demonstration, lecture, movie, visual.

Promise in virus research. Achievement and, ABS 26, 152

Prophecy (ether). An aetherial, 29,

PROPOSED REVISION. of collegiate mathematics in first year (college). ABS 26, 25; of the constitutions of this ASSOCIATION. 28, 38

Proteins. 29, 100

PROTOPLASM (a, ic). Life in, 28, 86; Micro-, macro- and sub-microscopic. Structure of, 28, 111; movement. 26, 112; 27, 4, 41

Protozoa. Enzymes in, ABS 29, 19 Psychophysics. Size, distance, and color in, ABS 27, 138

Publications in chemistry at Cross College, 28, 138

Pulse techniques in ultrasonies.

Purification of organic solids. Teaching brief on the, 27, 65

0

QUALITATIVE ANALYSIS. of plastics. Theses on, ABS 27, 93; Thioacetamide, reagent for, 28, 128 OUANTITATIVE ANALYSIS. Gravity filtration in the preparation of KMnO4 solution. ABS 27, 130; Limits of error in double indicator

titrations of volumetric analysis.

28, 117; Multiple equilibria in the

volumetric analysis of nickel. ABS 29, 23

Quantum mechanics and the theory of nuclear forces. ABS 29, 34; see also Heisenberg, valence etc.

Ouestionnaire on the bachelor of science curriculum in physics. ABS 26, 26

R

Rabbit ova. Technique employed in experiments on the parthenogenesis of, ABS 27, 120

Race and form. Problems of, ABS 30, 13

RADIATION. induced decomposition of hydrocarbons. ABS 29, 25; measurement. Statistical fluctuation in, ABS 29, 29

Radioactive tracers. ABS 26, 26. See also nuclear.

Radiofrequencies. Solar and cosmic noise at, 26, 141

Ransford. Rev. J. E., AUTH 29, 113 Rate expressions. Exponents occurring in chemical, 26, 93; 27, 64

Ratio of the specific heats of methane from ultrasonic measurement. ABS

Real and complex numbers. Common origin of, 26, 133

Rev. Timothy P., AUTH Reardon.

Recrystallization of benzoyl peroxide (safety notice). ABS 27, 85

Regeneration in the salamander. Forelimb, 27, 107

Regis College. News items. 26, 107 Relative merits of various colorimeters (notice). 26, 96

Religious perspectives of college teaching in the physical sciences, by Sir Hugh Stott Taylor. BRev 29, 75 Removing fluorine etching from glass.

30, 95

REPORT. on the surface tension of milk. ABS 27, 75; on the 25-volume index of the BULLETIN. 26,

RESEARCH. Achievement and promise in virus, ABS 26, 152; on liquids. Forty years of, ABS 27, 158; at Loyola College, Madras, India.

Chemical, 28, 104; pays its own way. ABS 27, 85; program in chemistry. Undergraduate, 28, 80; Recent advances in chromosome, ABS 27, 121; in some of our liberal arts colleges. Statistics on chemical, 27, 156; Secchi and solar, 30, 76; ABS 29, 36; tool. Ultrasonics, new, ABS 27, 100; workers. On the training of, ABS 27, 122; Undergraduate, 30, 96.

Resistor. Thermistor in differential thermometry. 27, 101

Respiration studies. A method for, ABS 29, 21

Revaluation of Soviet genetics. 27, 40 Review of slide rules currently available. Brief, 27, 30. See also (reviews of) topics such as nuclear physics, etc.

Revised constitutions of this ASSO-CIATION. Proposed, 28, 38

Rh. blood groups. Genetics of the, ABS 27, 122; factor. its discovery and history. 26, 44; ABS 15

Roberts, R. P., AUTH 27, 40, 125 Rockhurst College. News items. 26,

Root of a complex number. Note on the square, 27, 70

Roszel. R. J., AUTH 26, 24

RT Aurigae. Period of, ABS 28, 27 Ruddick. Jas. J., AUTH 26, 31; 27, 32; 28, 30; 29, 34; 30, 28, 136; erratum: see 31, 32 (1953).

Rule. See straightedge, slide.

RUSSIA. The revaluation of Soviet genetics, 27, 40; Science in Soviet, 29, 10

Szecheri, S.J. non-Euclidean geometer. Girolamo, ABS 26, 153

SAFETY, through home-made movies. Laboratory, 26, 20; Recrystallization of benzoyl peroxide (notice). ABS 27, 85

St. Charles' College. News items. 26.

St. Joseph's College. News items. 28. St. Louis University. News items. 26.

108, 161 St. Peter's College. News items.

108, 162; 27, 34

Salamander. Forelimb regeneration in the, 27, 125

San Francisco. University of, News items. 26, 108 Schubert. Rev. Clarence C., AUTH

29, 25; 30, 15

Schuh. Rev. Jos. E., AUTH 29, 17; 30, 14

SCIENCE. building. New Bagdad College, 28, 122; chats. Zoologische Plaudereien, by Rev. Franz Hesel-haus, S.J., BRev 27, 162; Collo-quium at Weston College. Jesuit. 30, 58; and creation. 27, 80; curriculum in physics. Questionnaire on

the bachelor of, ABS 26, 26; education and human values. ABS 27, 162; faculties of New England (Catholic) colleges at mid-century. A statistical review. 29, 72; earned by Jesuit alumni, 1936-45. Doctorates in the natural, 26, 116; Jesuit classics of, 29, 74; Mathematics. the language of, ABS 27, 33; toward an acceptable philosophy of, 28, 74; ventures into philosophy. 27, 85; in Soviet Russia. 27, 40; 29, 75; Religious perspectives in the college teaching in the physical, BRev 29, 75; Westinghouse fellowships in, 30, 97; see also philosophy.

SCIENTIFIC. anniversaries in 1949. 26, 72; apostolate of the Society of of Jesus. 30, 59

Scientifiques, S.J. Bulletin de liaison entre, 26, 43

Scully. Bern. M., AUTH 29, 24; 30, 97

SECCHI, S.J. and solar research. Father, 30, 76; ABS 29, 36; and stellar spectra. Father, ABS 27, 40

SECONDARY SCHOOL(s). Chemical equilibrium in, ABS 29, 24; Lecture experiments in high school chemistry. ABS 26, 17; see also:

high school.

SEISMOLOGICAL association. Anniversary volume. Jesuit, BRev 28, 70; observatory of Boston (Weston) College. News Items: 26, 105, 108; 30, 143. See also microseisms.

Semi-conductors. 30, 136; erratum 31, 32; ABS 30, 28

Senescence and death. 27, 86

Sense perception and the microscopic order. 28, 43, ABS 16

Sensibility and the balance. Sensitivity, 26, 57

Series of positive terms with proof. Tests for the convergence of a, 26, 54. Test.

Sex in bacteria. Evaluation of evidence for, 29, 136

Shadow projection. Illustration of kinetics by, ABS 26, 17

SHAPE. and color in psychophysics. Size, distance, ABS 27, 138; Transposition of a plane which leaves all plane figures unaltered in, ABS 27, 141; see also atomic orbitals.

Shrine. Auriesville, N.Y. Archeology at the Martyrs', 30, 11

Siemes. Rev. John B., AUTH 30, 100 Sines sines of? What are, 26, 23

Sites of phosphatase activity in paramoecium caudatum and peloxyma Caroleninsis. 28, 46

Size, distance, shape and color in psychophysics. ABS 27, 138

Skehan. Jas. W., AUTH 28, 58; 30,

Slide rules currently available. Brief review of, 27, 32

Smith. Rev. Thos. J., AUTH 28, 38 Society of Jesus. See Jesuit.

Society of Jesus. See Jesuit. Sohon. Rev. Fred. W., AUTH 26, 23.

Solar. Rev. Fed. W., AUTH 26, 25.

SOLAR. and cosmic noise at radio frequencies. 26, 141; eclipse. Geodetic measurements by means of a, 30, 67, ABS 31; research. Father Secchi and, 30, 76, ABS 36; spectrograph at Georgetown. Photography with the, ABS 30, 32

Solubility of hydrates. 29, 115

Solvents. Titration in non-aqueous. BRev 30, 71

Soviet. See Russia.

Spanish and Portuguese. Bibliography of chemistry textbooks in the, 27, 11

Specific heats of methane from ultrasonic measurement. Ratio of the, ABS 26, 28 Spectra. Father Secchi and stellar, ABS 27, 140

SPECTROGRAPH. at Georgetown. 28, 24; Photography with the solar, ABS 30, 32

SPECTROSCOPY. Microwave. ABS 28, 29; Nuclear spin and statistics by molecular, ABS 29, 33; Photometry in, ABS 30, 32

Spectrum. Lamb shift in the hydrogen, 28, 62

Spellanzani. Founder of experimental physiology. Lazzaro, ABS 27, 119 Square root of a complex number, 27,

70
Squaring numbers mentally. 29, 46
Stars brighter than 7^m.75. Photographic magnitude of, ABS 27, 159.
See also stellar etc.

State on matter. Vitreous, ABS 27,

STATISTICAL. review. Science Faculties of New England (Catholic) colleges at mid-century. 29, 72; fluctuations in radiation measurements. ABS 29, 29

STATISTICS. to atomic and molecular problems. Application of Fermi-Dirac, 29, 149, ABS 31; on chemical research in some of our liberal arts colleges. 27, 156; of the electromagnetic field. ABS 29, 32; by molecular spectroscopy. Nuclear spin and, ABS 29, 33; Philosophical implications of physical, 29, 59, 85, ABS 31

Steele, Rev. Domhnall A., AUTH 26, 23, 53, 132, 133; 27, 99, 161; 29, 26; 30, 19, 21

STELLAR, magnitudes. ABS 27, 159; spectra. Father Secchi, S.J. and, ABS 27, 140

STIRRING (and agitation). 27, 94 in organic chemistry. High speed, 26, 151

STOICHIOMETRY. Alligation methods in chemical and pharmaceutical problems. 27, 62, 129; Pearson's square method. 29, 25. See also Fahrenheit, hydrates etc.

Story of copper. MRev 30, 72

Stouter. V. P., AUTH 29, 22
Straightedge only. Wantzel's method for the determination of the possibility of geometrical construction using compass and, ABS 30, 21

Strain in an elastic body. The theory of finite, 29, 153, ABS 26

STRUCTURE. in chemistry. The relation of molecular to electronic, 30, 127; of matter. BRev 26, 154; Nuclear shell, ABS 28, 28; of organic molecules. Color and, ABS 27, 140; of physical science. Logical, 30, 40, ABS 27; of protoplasma. Microscopic, submicroscopic and macroscopic, submicroscopic and tumor development. Chemical, ABS 30, 17; Variable valence and chemical, 28, 52

Subsurface geological methods. 27,

Sufficient conditions. Necessary and, 29, 139

Sulfide. Thioacetamide reagent for H₂S. 28, 128

Sulfur compounds. Synthesis and properties of some new, ABS 29, 26

Sullivan. Rev. Jos. J., AUTH 27, 128, 135; 29, 75, 115

Sullivan, S.J. Rev. Jos. J., OBIT 30,

Sullivan. Rev. Wm. D., AUTH 26, 79, 121; 27, 4, 36, 41, 86; 28, 46, 86, 111; 29, 19, 100, 122; 30, 14

Supervision? What is good, ABS 26,

SURFACE TENSION. Effect of wetting agent on, 27, 130; of milk. Report on the, ABS 27, 75. See also liquids. Surplus for laboratories. Conversion and use of war, 26, 78, 149

Survey of Holy Cross Chemistry Department publications. 28, 138

Swords. Rev. Raym. J., AUTH 26, 54 SYLLABUS. High school chemistry, ABS 26, 19; of lecture demonstrations in chemistry. 30, 63; Notes on preparatory work for college chemistry. 27, 59. See also course, high school, first year, college, collegiate, freshman.

SYMPOSIA. Chemical equilibrium, 29, 23ff; Graduate studies in biology. 26, 14ff; Modern theories of acids and bases. 27, 135ff. See also applied mathematics, photography in

science, spectroscopy etc.

SYNTHESIS. of adipic acid and its derivatives. 26, 49; (notice). Annotated bibliography of the use of organo-lithium compounds in organic, 27, 76; preparation and properties of thioacetamide. ABS 29, 24; in organic chemistry. Preferred, 26, 85; and properties of some new sulfur compounds. ABS 29, 26; see also diagnostic, Grignard, Wurtz, etc.

Synthetic theory of evolution. 29, 47, 80

SYSTEM. of dimensional analysis. 27, 18; of stoichiometry. 27, 62, 129

T

TEACHING. the Grignard synthesis in chemistry. Notes on, 28, 92; isomerism in organic chemistry. 27, 12; nuclear physics. Difficulties and methods of, ABS 28, 26; word problems in algebra. Method of, 26, 25; brief on the purification of organic solids. 27, 65; basic mechanical units to students of elementary mechanics. Method of, ABS 26, 31; of science at the Mass. Inst. Tech. Westinghouse fellowships available in the, 30, 97; in the physical sciences, by Sir H. S. Taylor. Religious perspectives of college, BRev 29, 75; What is good supervision? ABS 26, 154; see also Angers.

Theories of acids and bases. Symposium. 27, 134ff

TECHNIQUE(s). employed in experiments on parthenogenesis of rabbit ova. ABS 27, 120; for obtaining vacuum pressures of the order of 10-8 Hg and lower. 28, 30; see also tungsten.

TEMPERATURE. regulator. Electronic, 27, 96; in the vicinity of the absolute zero. Measurement of, ABS 26, 30; see also thermistor, thermocouples etc.

Tensor models for the deuteron. In new, ABS 26, 27

Tests at Georgetown. Co-operative physics, ABS 27, 138 Texepan man. 26, 118

Textbooks in the Spanish and the Portuguese. Bibliography of chemistry, 27, 11

Theorem in geometry (isosceles triangle). 29, 147

Thermistor in differential thermometry. 27, 101

Thermocouples. Simple method for welding. 27, 93

Theses on the qualitative analysis of plastics. ABS 27, 93

Thioacetamide. Reagent substitute for H₂S. ABS 28, 128; ABS 29, 24

Time scale of geological history. 28,

Tobin. Rev. John A., AUTH 26, 26; 27, 33, 138; 28, 26, 135; 29, 29

Toward an acceptable philosophy of science. 28, 74

Tracers. Radioactive, ABS 26, 26 Training of research workers. ABS 27, 122

Transposition of a plane which leaves all plane figures unaltered in shape. ABS 27, 141

Trap for HBr. 27, 12 Trigonometric and exponential functions. Relation between, 29, 143

Trigonometry. Applications of, ABS

Tumor development. Chemical structure and, ABS 30, 17

Tungsten. Measurement of vacuum pressures by the adsorption of gases on, ABS 29, 34

Turner. Chas. F., AUTH 26, 18

U

ULTRASONICS. Brief bibliography of, 26, 29; Bibliography of magnetostriction (notice). 26, 29; Chemical applications of, ABS 26, 18; measurement. Ratio of the specific heats of methane from, ABS 26, 28; new research tool. ABS 27, 100; Pulse techniques in, ABS 26, 28

UNDERGRADUATE. organic syntheses (adipic acid etc.). 26, 49; research. 30, 96; research program in chemistry. 28, 20; see also curriculum, first year, etc.

UNITS. New electrical, 26, 30; to students of elementary mechanics. Method of teaching basic mechanical, ABS 26, 31

Use of war surplus materials for laboratories. Conversion and, 26, 78, 149

VACUUM PRESSURES. of the order of 10-8 mm. Hg and lower. Techniques for obtaining, 28, 30; by the study of the adsorption of gases on tungsten. The measurement of, ABS 29, 34

Valence and chemical structure. Variable, 28, 52; see also orbitals, covalence etc.

Values. Science education and human,

ABS 27, 162 Varela. Miguel M., AUTH 30, 17 Variable. see valence.

Robt. E., AUTH 27, 130; Varnerin. 30, 16

Vector analysis. Applications of, ABS 26, 23

Velocity of light. Some recent determinations of the, ABS 30, 30

Vials for graduated cylinders. 27, 137 Virus research. Achievement and promise in, ABS 26, 152

VISUAL AIDS, in high school physics. ABS 29, 36; Story of copper. MRev 30, 72; Phosphorus, key

to life. MRev 26, 52; Syllabus of lecture demonstrations in chemistry. 10, 63. See illustrations. Safety etc. Vitreous state of matter. ABS 27, 128 Vocational guidance. Industrial education. ABS 27, 158

VOLUMETRIC ANALYSIS. Double indicator titrations. Limit of error in, 28, 117; of nickel. Multiple equilibrium in the, ABS 29, 23; Gravity filtration of KMnO4 solution. ABS 27, 130; see also solvents.

W

Walsh. Rev. Michael P., AUTH 27, 121; 28, 16; 29, 10, 19; 30, 122

Wantzel's method for determining the possibility of (geometrical) construction with compass and straightedge only. ABS 30, 21

Wave function and ionization potentials for the ground state of CO2.

Westinghouse fellowships for the teaching of science available at Massachusetts Institute of Technology. 30, 97

Weston College. News items: 26, 105, 105, 108; 27, 155; 28, 101; 30, 143; Jesuit Science Colloquium at, 30, 58; Subsurface geological methods. 27, 162; see also seismology, Boston College, etc.

Wetting agents on surface tension. Effect of, 27, 130

Word problems in algebra. Method of

teaching, 26, 25 Wulf, S.J., 1868-1946, a Jesuit physicist. Rev. Theodor, OBIT 26,

Wurtz reaction, 27, 64

X

Xray diffraction. Laboratory practice in, ABS 30, 15

Y

Yancey. Rev. P. H., AUTH 27, 122, 160

Z

Zoologische Plaudereien, by Rev. F. Heselhaus, S.J., BRev 27, 162

CHECKLIST OF RECENT ISSUES OF THE JESUIT SCIENCE BULLETIN

Imprint									
Yr	vol	Jan	Feb	Mar	May	Sep	Oct	Nov	Dec
1949	25	(Twenty-five volume index)					5		
1948	26					1 p			2
1949	26			3	4				
1949	.27								1
1950	27		2	3	4* p				
1950	28							1p	
1951	28	2		3	4				
1951	29						1 p		
1952	29	2		3	4				
1952	30						1p		
1953	30	2		3	4				
1953	31						1 p		

Official Title: Bulletin (and/or Proceedings) of the American Association of Jesuit Scientists, Eastern (States) Division.
For checklist of earlier volumes, see inside cover of 25 (5), October 1949.

p: includes proceedings of annual meeting.

Annual indexes appear in no. 4 of vols. 26-28 for those volumes; and in no. 1 of vols. 30-31 for each of the preceding volumes.

^{*} issue copyrighted.