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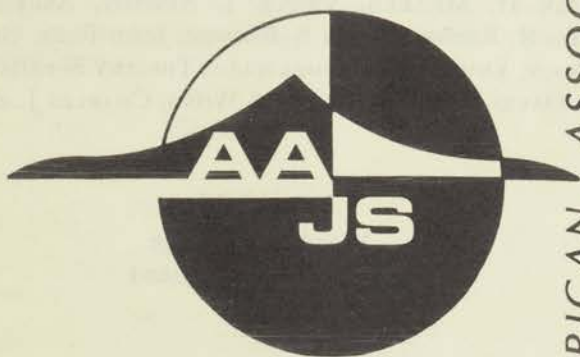
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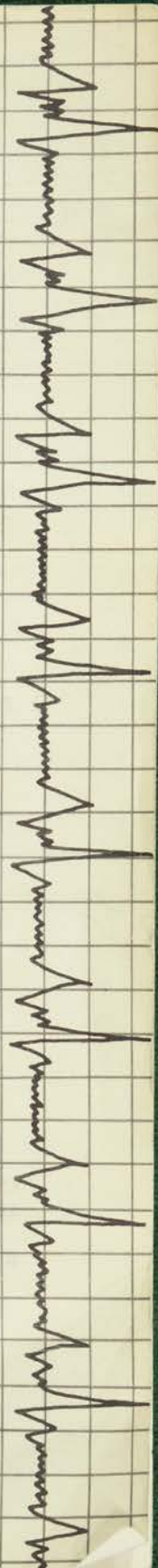
AMERICAN ASSOCIATION OF JESUIT SCIENTISTS

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of Jesuit Scientists

Eastern States Division

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Woodstock College
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TO OUR READERS

At the annual convention of the Association held last August the following motion was approved:

“that the editor of the Bulletin be immediately authorized to approach the editor of the Jesuit Times for the purpose of publishing the spring issues of the Bulletin in the Jesuit Times.”

Accordingly we plan to publish in place of the two spring issues of the Bulletin for next year four news columns in the Jesuit Times. Care will be taken that all those on our current mailing list receive copies of the Jesuit Times in which our science news column appears.

REPORTS OF SCIENTIFIC ACTIVITY

High Schools

Loyola High School. The summer school offered courses to students who were not in the accelerated course in order to make it possible for these students to take Advanced Placement courses. Seventeen juniors and seniors took a pre-calculus course, taught by Mr. Kevin Lysaght, S.J.; thirty sophomores and juniors took a course in intermediate algebra, taught by Mr. James O'Connell, S.J.; thirty-two of the present juniors and seniors took a course in genetics under Mr. Donald Urbancic.

During the present semester, forty seniors are taking calculus for Advanced Placement. Fr. John Martinez, S.J. is teaching an elective course in probability this semester and in matrix algebra next semester to forty-one seniors.

Fr. Martinez taught mathematics in the Higher Achievement Program here this past summer. The course was in the integers and included informal algebra. Fr. Richard Harper, S.J. taught courses in enrichment mathematics to 7th grade students in Pittsburgh, Pa. in a Higher Achievement Program.

Fr. Richard Harper, S.J.

Colleges and Universities

Boston College. A new summer program consisted of a course in elementary astronomy offered by Randolph J. Marting, Ph.D. candidate at MIT, and a second one entitled Our Dynamic Atmosphere by Norman J. Macdonald of the Air Force Cambridge Research Laboratories.

Geology. Fr. James W. Skehan, S.J., newly elected chairman of the faculty council, served as a member of the Earth Science Curriculum Project (ESCP) on the final rewrite of *Investigating the Earth*, a ninth-grade text soon to be published by Houghton Mifflin. During the summer, he and one of his staff spent three weeks in Tuscany, Italy, in studies related to remote sensing of geological environments. He also served as director of several projects at Paddy Island (Nova Scotia), Marble Canyon (Arizona), and Mono Craters (California). The goal of these projects is the design of multiband photographic systems for satellite use which may have the capability for unique recognition of major rock types on other planets. In addition, several lectures filled his schedule: "The one-time alps of new england", given at the Philip Neri School for Delayed Vocations; "Volcanic activity in western North America", at Wentworth Institute; and "Oceanography and the earth sciences", at the New England conference on ocean science.

The geology-astrogeology research team have been conducting field, laboratory, and compilation studies on the geology of the Wachusett-Marlboro Tunnel and vicinity. This work, funded by NSF, has revealed that southeastern New England has been rifted by several of the largest scale thrust faults recognized to date in the Northern Appalachians.

Fr. James W. Skehan, S.J.

Canisius College. Chemistry. Since August 1st, Fr. Paul McCarthy, S.J., has been working in the research laboratories of the University of Copenhagen on a NATO fellowship. His work is a continuation of the research in coordination chemistry that he has been engaged in for some time. He is also in the final

stages of editing a book which he and Professor Nakamoto are putting out with the assistance of several collaborators.

Dr. Joseph F. Bieron has recently joined the staff. During his military service he worked in the Redstone research laboratories on projects involving chemical reactions under the influence of CO₂-laser radiation. He is currently setting up a new laboratory to continue the work. Those formerly associated with the department will be sorry to hear that Dr. James H. Crowdle, former chairman and a teacher here since 1919, died unexpectedly from a heart attack on July 31.

Mathematics. The new chairman of the department is Dr. Richard L. Uschold, who replaces Dr. Robert F. Tidd. After nearly two decades of service in the department, Dr. Tidd has left to take up the position of chairman of the department at North Dakota State University. One of last year's innovations has been continued this year as it seems to be working quite well: the calculus courses are taught in larger lecture groups of about 70 to 90 students, with a recitation section of 20 to 30 students meeting once a week.

Physics. In connection with the shift of emphasis in the elementary labs to microwaves, the department has acquired 10 units of the Welch Ed-Set, Mark II. The units have proved very satisfactory and seem to be much enjoyed by the students. During the summer Dr. Lee and Fr. James J. Ruddick, S.J., along with Fr. Robert Haus and Dr. Uschold of the Mathematics Department took special computer seminars at SUNY/Buffalo. The seminars are part of a special training program in preparation for the introduction of the IBM System/360, Model 67, which is to be installed at the U.B. Computer Center next year. Dr. Lee and Fr. Ruddick have done a considerable amount of program writing for special applications in physics. Examples are: calculation of Racah coefficients, solving simultaneous equations for circuit analysis, solving potential well problems in quantum mechanics, comparing experimental and theoretical results for nuclear counting experiments. The department is running a special seminar for faculty and students, including those from the Departments of Chemistry, Sociology, Economics, and Education, in order to enable a wider use of area computer facilities.

James J. Ruddick, S.J.

Fairfield University. *Chemistry.* Fr. Gerald F. Hutchinson, S.J. is Program Chairman of the New England Association of Chemistry Teachers for 1967. Fr. Robert E. Varnerin, S.J. is at Catholic University for a year of advanced study under a Petroleum Research Fund Grant. One-fourth of the 480 entering freshmen are majoring in physics, chemistry, mathematics, or biology.

Fr. James H. McElanay, S.J.

Georgetown University. *Biology.* Fr. J. A. Panuska, S.J., was promoted to associate professorship and was elected to full membership in the American Physiological Society. During August he delivered a paper on "Operant behavior by hamsters at low body temperature" at the AIBS meeting at the University of Maryland, and "Behavioral effects of dimethylsulfoxide" at the meeting of the Society for Cryobiology at Boston. A paper entitled "The effect of dimethylsulfoxide on cooling rates of unrestrained rats" was published in *Cryobiology*, 2, 345-50. His research contract with the U. S. Army Medical Research and Development Command was renewed for the coming year for \$29,000. James Meier, S.J., Maryland Province, and Martin Hoffman, S.J., Chicago Province, are now studying in the department.

Fr. Joseph A. Panuska, S.J.

Observatory. The observatory has just published a monograph entitled "Analysis of the first spectrum of titanium from 2000 Å to 9000 Å" by H. W. Banks, W. R. Bozman, and C. M. Wilson. The sum of \$31,000 has been provided by NASA for the continuation of the observations and studies of the atmospheres of the planets.

Fr. Francis J. Heyden, S.J.

Holy Cross College. *Chemistry.* Dr. Leo A. Paquette published several papers including "The photoisomerization of heteroatomic 8- π electron systems", in the Journal of the American Chemical Society, Vol. 88; "Unsaturated medium-sized heterocyclic rings: synthesis and selected reactions", in the Transactions of the New York Academy of Sciences, Vol. 28; and "Mass spectrometry in structural and stereochemical problems - study of fragmentation of some azabicyclic lactams", in the Journal of Organic Chemistry, Vol. 31.

Fr. Bernard Fiekers, S.J.

Le Moyne College. *Biology.* Mr. James J. O'Brien, S.J., of Regis College, Willowdale, Ontario, spent the early part of the summer working with Dr. Louis De Gennaro, chairman of the biology department. The work was supported in part by the research committee at Le Moyne and involved a study of the histochemistry and biochemistry of the glycogen bodies of adult chickens.

Loyola College. *Biology.* Mr. Charles R. Graham, Jr. has joined the faculty to teach physiology and histology. New equipment, including a B&L 600 recording photospectrometer and an RC3 Sorvall refrigerated centrifuge, has been installed for the plant biochemistry and physiology laboratory.

Chemistry. Fr. James F. Salmon, S.J., joined the faculty as assistant professor of chemistry. He will be on leave for 1966-67 to pursue post-doctoral studies in geochemistry at Ohio State University. Fr. James L. Lambert, S.J., currently at Woodstock College, is teaching a course in qualitative organic chemistry during the first semester.

Plans are being developed to operate the chemistry departments of Loyola and Mt. St. Agnes College as a joint department in 1967. Duplicate course offerings will be eliminated; courses will be taught by the joint faculties, and students will do research with members of either faculty. This year four joint seminars are being offered by the chemistry departments of Loyola, Mt. St. Agnes, and the College of Notre Dame.

Fr. Michael A. Lorenzo, S.J.

Wheeling College. *Biology.* Fr. Paul Beining, S.J., replaces Fr. J. Hanzley, S.J., as head of the department. Fr. Hanzley continues to teach, but because of illness his schedule has been reduced.

Chemistry. A series of lectures entitled "Materials Science" was given during the summer months as a continuation of the chemistry for industry program. During the fall and winter another offering in this program will be a course in industrial electronics. The academic year extension grant held by Dr. Hartman has been renewed.

Physics. This year the college inaugurated a pre-engineering program, the first two years of which are essentially the same as the physics program and are under the direction of the physics department.

The department attempted a "physics retreat" at an Episcopalian retreat house, under the direction of invited members of the faculty. It was a success and will be repeated next year.

Fr. R. B. Winslow, S.J., took a year's leave of absence to study electronics. Dr. Knorr, the new head of the department, acquired the assistance of Mr. R. Turk and Mr. Crane Hertz, S.J., while losing the services of Fr. Francis Haig, S.J., who became president of the college.

Fr. Joseph Duke, S.J.
Mr. Crane Hertz, S.J.

Scholasticates

Bellarmino College. Mathematics. Fr. Thomas E. Fleming, S.J., is teaching the "Essentials of Accounting" to five postulant brothers. This course will prepare them for their future work in the Society.

Fr. Thomas E. Fleming, S.J.

Woodstock College. Chemistry. Fr. James L. Lambert, S.J. (*N.O.*) pursued post-doctoral research during July and August at Johns Hopkins University. Deuterium isotope exchange and structural isomerization were employed to study base catalyzed homoenolization in camphor and in 1.5-dimethylbicyclo(3.3.1) nonan-9-one. Three papers co-authored by Fr. Lambert appeared in the Journal of the American Chemical Society, Vol. 88. They were on the subject of homoenolization and related phenomena. During the fall term of this year Fr. Lambert will be visiting instructor in chemistry at Loyola College, Baltimore, where he will conduct a course in qualitative organic chemistry. He also continues as a part-time post-doctoral research fellow at the Johns Hopkins University during the full academic year.

Mr. Thomas Romer, S.J. (*Wis.*) completed his M.S. thesis at St. Louis University this summer. The title of the thesis is "Electrochemical studies of the reduction of 1,4 diethyl pyrazinium difluoroborate and 1,3 pyrimidinium difluoroborate." An abstract will appear in the yearbook issue.

Mr. Robert W. Dundon, S.J. (*Wis.*) worked on the Fe⁵⁷ Mossbauer spectra of pyroxene silicates from natural sources in the RINS lab at Woodstock during the summer. Volcanic pyroxene shows completely ordered iron. The width of the absorption line in this sample is about one third greater than that of pyroxenes from slowly cooled rocks. Pyroxenes extracted from seven chondrites (meteorites with silicate nodules enclosed) and one achondrite have line widths and positions like that of the slowly annealed terrestrial samples. In these samples the iron is completely ordered. The Chainpur meteorite alone has disordered iron. This is of interest because other evidence indicates that Chainpur is a primitive chondrite.

Mathematics. Mr. James Gilroy, S.J. (*Wis.*) taught mathematics at Creighton University during the summer.

Fr. Robert A. Bagnato, S.J. (*N. Y.*) received a fellowship to participate in a summer mathematics seminar, sponsored by the Canadian Mathematical Congress, at the University of British Columbia.

Physics. Fr. Joseph S. Rooney, S.J. (*N. Y.*) was a member of the National Science Foundation Institute at Seattle University this summer.

Mr. Maurice Wong, S.J. (*Ireland*) taught at Fairfield University this summer. A paper of his was published in the Physical Review, 149 No. 1; 378 (1966). The title is "Scattering amplitude for multipole mixtures in the mossbauer effect."

Mr. Victor J. Newton, S.J. (*N. E.*) finished his Ph.D. thesis at MIT this summer. The title of the thesis is "Many-channel scattering matrix in the intermediate energy region." An abstract will appear in the yearbook issue.

Social Science. Mr. David P. Schiebel, S.J. (*N.Y.*) prepared a paper for Fr. Campion's office for the survey of the Society's apostolates, entitled "Survey of demographic data relevant to the Society's apostolates."

Mr. Maurice Wong, S.J.

Graduate Studies

Brandeis University. Mr. Frank Doe, S.J. (*N.E.*) completed his experimental work for his dissertation and left for Weston, where he will do the writing. Mr. Antonio Samson, S.J. (*Phil.*) spent the summer working with Dr. Stevenson on the identification of the products formed by irradiating friedelin. Mr. Noel Braun, S.J. (*N.E.*) continued his work on organo-metallic compounds with Dr. Rosenblum. Mr. Robert Paradowski, S.J. (*N.E.*) worked on the application of the Kirkwood-Westheimer-model calculations to Winstein's treatment of the special salt effect.

Mr. Robert Paradowski, S.J.

Harvard University. Mr. John Mansfield, S.J. (*Det.*) spent the summer in Europe where, among other activities, he attended the CERN conference on particle physics at Erice, Italy, in June, and the Istanbul Conference on symmetries in elementary particle physics in August. He is presently doing research in current algebras and elementary particle symmetries under the direction of Prof. S. Coleman.

Mr. John Mansfield, S.J.

University of Pennsylvania. The Maryland Province recently established a residence at the University of Pennsylvania. The Ferdinand Farmer Residence is named after Father Ferdinand Farmer, S.J. (1720 - 1786) who was involved in the original establishment of the University. The address is 4520 Chester Avenue, Philadelphia, Pa., 19143. There are twelve rooms, eleven of which are presently occupied. In the sciences, there are three Jesuits in economics and population research, two in computer science, one in metallurgical engineering, and one in physics. All of these departments are top notch. In particular, the physics department has strong groups in solid state, elementary particles, and low energy nuclear physics. The Laboratory for Research on the Structure of Matter (LRSM) provides an opportunity for interdisciplinary work in engineering, physics, and chemistry.

Fr. Siberz (*Cal.*) and Mr. Hathaway, (*Md.*) are beginning their first year in computer science; Mr. Skelskey (*N.E.*), his second in metallurgical engineering; Mr. Corden (*N.O.*), his second in physics; and Messrs. Daoust (*Det.*), Gibson (*Mo.*) and Merrick (*Wis.*), their theses in economics.

Mr. Pierce Corden, S.J.

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