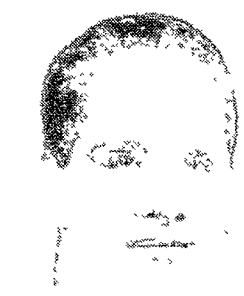
Notre Dame

A Magazine of the University of Notre Dame

FALL • 1949

Klockenkemper



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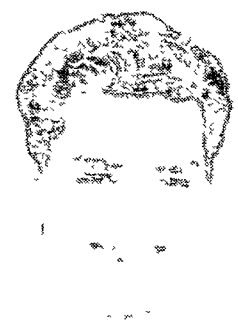
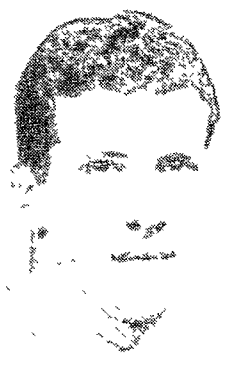


Greenberg

Notre Dame, Our Mother

Notre Dame, our Mother,
Tender, strong and true.
Proudly in the heavens,
Gleams the gold and blue,
Glory's mantle cloaks thee,
Golden is thy fame,
And our hearts forever,
Praise thee, Notre Dame.
And our hearts forever,
Love thee, Notre Dame.



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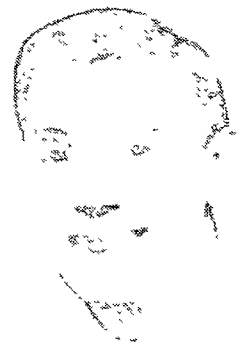

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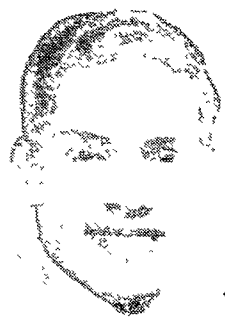

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The University of Notre Dame

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Notre Dame

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James E. Armstrong, '25, *Editor* • John N. Cackley, Jr., '37, *Managing Editor*

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VOL. 2 FALL • 1949 NO. 4

Atom Smashing

Important Research With Electrostatic Generator Conducted On Campus During Past Decade

By BERNARD WALDMAN

LINE smashing fullbacks have long been traditional at Notre Dame, but few of the thousands watching grid games this fall in the Irish stadium will be aware that one of the world's most powerful electrostatic generators (atom smasher) is located in a nearby campus building.

To obtain the complete story of nuclear physics at Notre Dame we must go back to the fall of 1933 when a newly appointed physics instructor, Dr. George B. Collins, was touring the Engineering Building. Upon seeing a large unoccupied laboratory, more than 40 feet in all dimensions, Collins turned to his guide, Father Steiner, and exclaimed, "This is an ideal room for the erection of an electrostatic generator and accelerator." Collins was speaking of a machine that had just been developed by Dr. Robert Van de Graaff at the Massachusetts Institute of Technology.

The science of nuclear physics was then in its infancy. There were at most only a half dozen apparatus pieces of all types in this country that could produce nuclear disintegrations (the scientific term for atom smashing). None of the equipment needed, or even major parts, could be obtained commercially. All had to be made in the laboratory. In 1934 Dr. Collins started the construction of

The author received A.B. and Ph.D. degrees from New York University, the latter having been awarded in 1939. He joined the Physics Department at the University of Notre Dame in September, 1938 as a Research Associate. Between October, 1942 and March, 1943, Dr. Waldman was an Official Investigator for the Office of Scientific Research and Development at Notre Dame. The University granted a leave of absence to him in March, 1943 to engage in atomic bomb research at the Los Alamos, N. M. Scientific Laboratory. Later he was an official scientific observer for the Manhattan District Project during the first atomic bomb explosion at Alamagordo, N. M., on July 16, 1945. Dr. Waldman observed the efficiency of atomic bombing under combat conditions on August 6, 1945, when he watched a mushroom cloud rise over Hiroshima, Japan, from an airplane accompanying the bomber on this world-shaking mission. He returned to Notre Dame as Associate Professor of Physics in October 1945, and is now in charge of the Nuclear Physics Laboratory.

Notre Dame's first electrostatic generator. It was completed in 1937 and produced 1,500,000 volts.

Producing a high voltage on a generator is a far cry from atom smashing. Collins, then, put his efforts on the construction of an accelerating tube that would permit electrons (the smallest particles that we know which carry a negative electric charge) to be released at the high voltage terminal (large spherical shell) and then be accelerated by the high voltage to a grounded end. These electrons would travel through an evacuated tube in order to prevent collisions with air molecules and attain a speed comparable to 95 per cent of light —*a speed of 168,000 miles per second!* It is these high speed electrons or atomic bullets that are used to produce nuclear transmutations.

During the spring of 1938 the accelerator was completed and a beam of electrons accelerated through a voltage of 1,500,000 volts was obtained. *This was the highest energy electron beam ever produced artificially in any laboratory in the world!* Nearly all of the existing accelerators were using other projectiles than electrons. Most of them used protons which are hydrogen atoms with its lone electron removed. Protons could produce disintegrations with ease but electrons were not capable of a similar action. It was, therefore, a question of prime importance to see whether it was

Notre Dame's atom smasher, located in Science Hall. Weighing 50 tons this generator is 40 feet long and 8 feet in diameter. The 202 aluminum hoops distribute charges uniformly and prevent sparking.

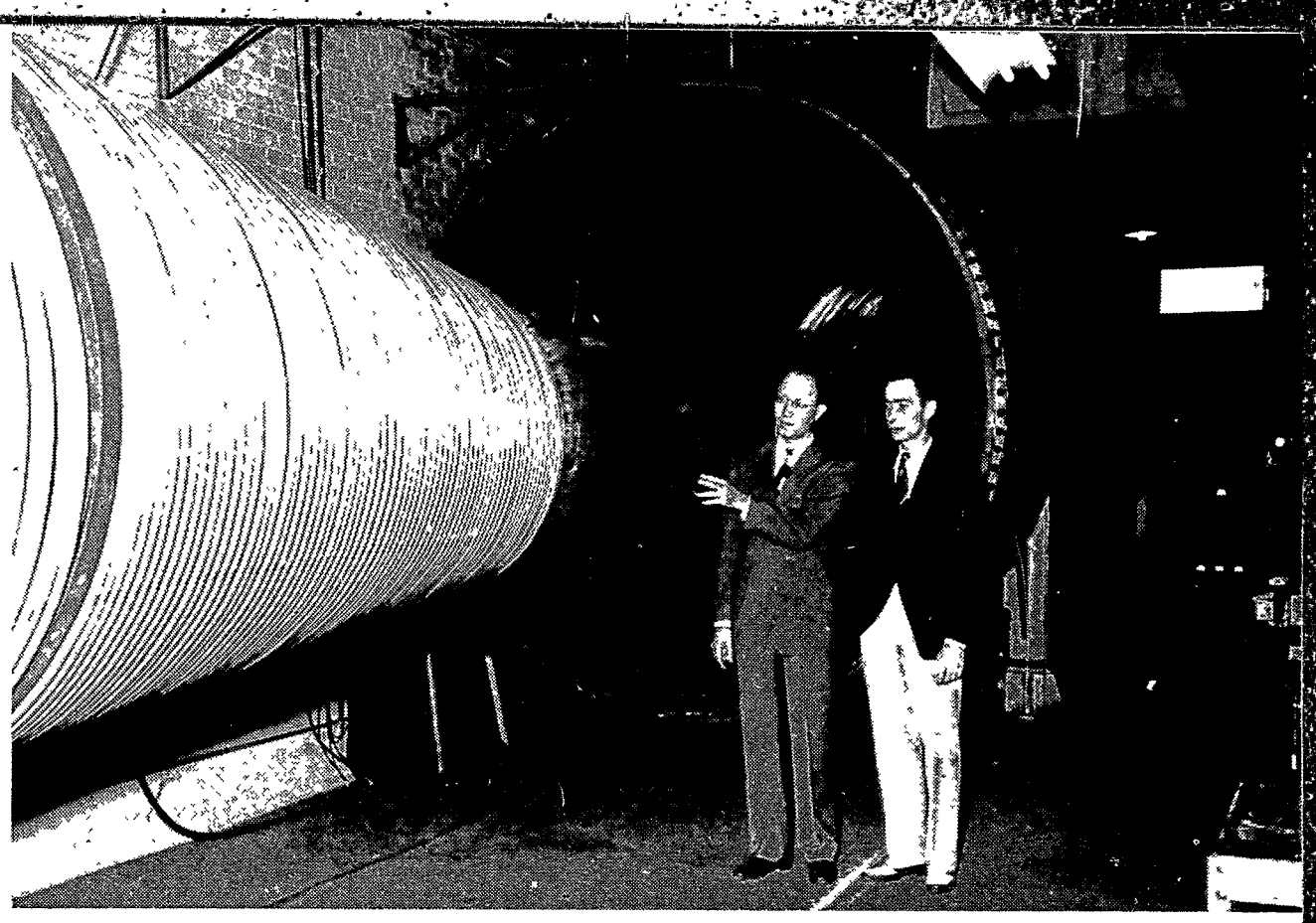
possible to transmute matter by high speed electrons.

In the fall of 1938, the writer joined the Physics Department staff and assisted Collins in his search for disintegrations by electrons. One day early in January of 1939 this group bombarded metallic beryllium (one of the lightest metallic elements) with electrons of 1,700,000 volts energy and observed the emission of neutrons from the beryllium. Neutrons are elementary particles just like protons and electrons but they have no electric charge and weigh 1800 times as much as the electron. It was definitely proven that the beryllium would disintegrate into two helium gas atoms and one neutron, only when the bombarding energy of the electrons was over 1,630,000 volts. This was the *first time man had ever produced a nuclear transmutation by electron bombardment!*

When electrons of high energy strike any type of matter their speed is lessened and eventually they stop. Most of their energy appears as heat in the target material but some of the energy, about 5 per cent, is in the form of radiation called X-rays. These X-rays are exceedingly penetrating and very dangerous biologically because they produce severe burns and destroy tissue. In fact, a complete body dose of high energy X-rays would be fatal. However, with adequate precautions it is possible to utilize the X-rays without exposing the experimenters themselves.

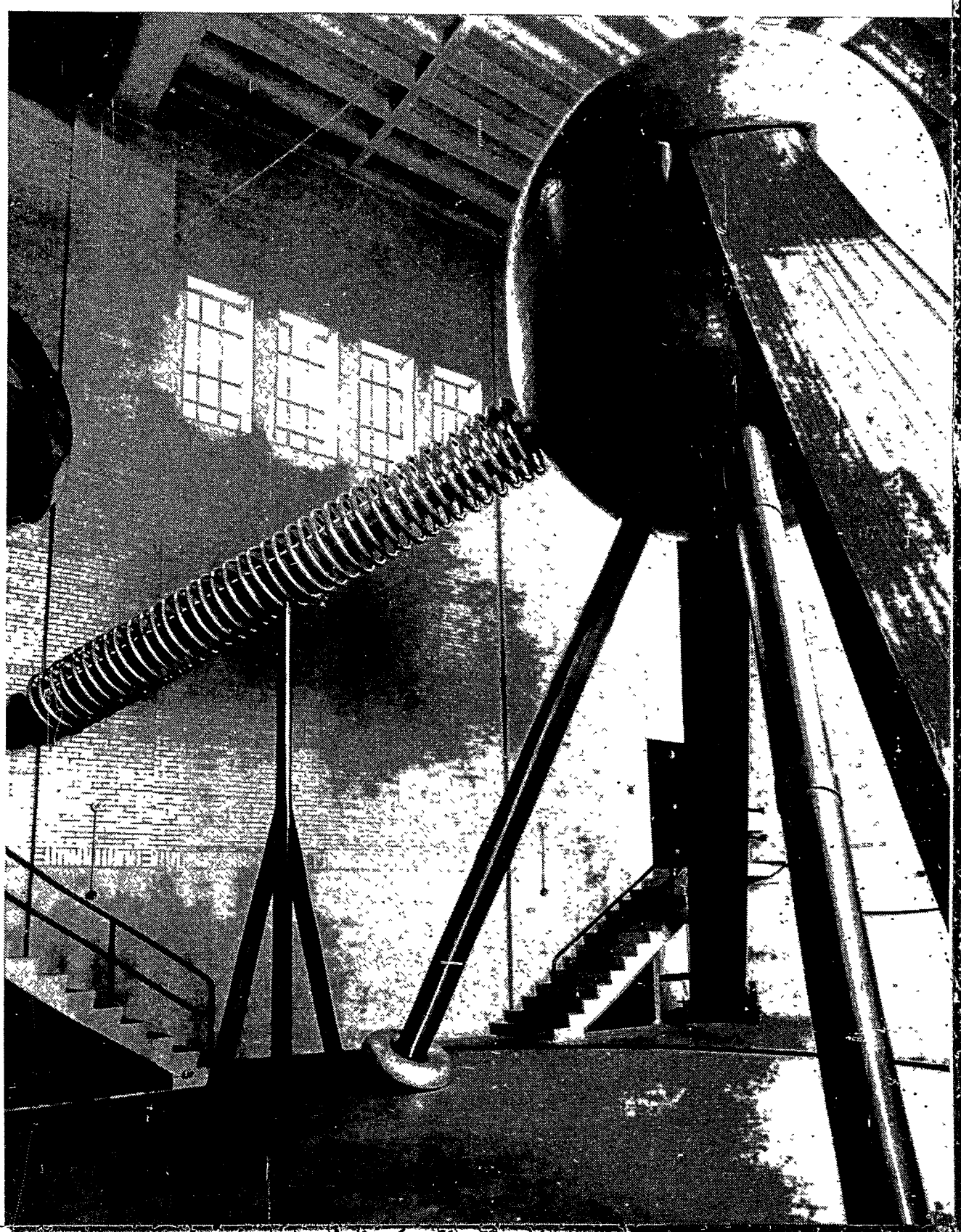
Immediately following the electrodisintegration experiments another new phenomenon was observed. The X-rays produced by bombarding a lead target with 1,500,000 volt electrons were allowed to strike an indium foil (indium is a metallic element that is associated with zinc and cadmium in nature). After a half-hour bombardment radioactivity was detected in the indium foil by an instrument known as a Geiger counter. However, the indium had not been disintegrated or transformed into a new element. The indium had absorbed the X-rays and had become more energetic or as a physicist would say, it was "excited." This excited indium did not lose its energy of excitation instantaneously like most elements do, but every 4½ hours, half of the excited indium nuclei decayed to normal indium nuclei with the reemission of X-rays, which had been detected by the Geiger counter. Excited nuclei of this type are called metastable nuclei and these experiments were the first to show that metastable nuclei can be produced by X-ray bombardment. It should be mentioned that simultaneously and independently two French physicists also excited indium by X-rays.

The obtaining of metastable states in nuclei by X-ray irradiation opened up a



While Dr. Miller looks on, Dr. Waldman points to the high voltage terminal. The outer steel tank, in background, can be moved on trolley tracks.

Original electrostatic generator at Notre Dame built in 1937. It has been disassembled since present atom smasher was erected.



new field which would lead to a better understanding of X-ray production and the nature of nuclei. It became apparent to the Notre Dame group that a new higher voltage accelerator was necessary. The limitations on the existing machine were quite severe. Between May and November the humidity was too high to permit operation because the electric charge escaped from the high voltage terminal through the moist conducting air. Also, higher voltages could only be obtained with a larger machine and that meant a larger room, which was impractical.

These difficulties were solved by Dr. R. G. Herb at the University of Wisconsin who had enclosed an entire electrostatic generator and accelerator tube in a steel pressure tank. The tank was pumped up to ten atmospheres pressure with dry air so that the humidity problem was solved. The high pressures also afforded an increased electric breakdown strength which resulted in higher voltages being obtained in a smaller space.

During the summer of 1940 work was begun on the construction of a new pressure electrostatic generator patterned after the Wisconsin machine. It was housed in Science Hall annex and consisted of a large steel tank 40 feet long, weighing 20 tons. To facilitate construction and maintenance the tank was made in two parts which could be unbolted and one portion, 32 feet long, was mounted on trolley wheels so that it could be pushed aside if necessary.

The generator itself was similar to the open air type but was mounted horizontally. The high voltage terminal is a hollow steel shell and is supported by three textolite (plastic) legs. The electric charge is carried up to the terminal by a rapidly moving cloth belt (motor driven at 50 miles per hour). At the terminal a series of needles removes the charge which had been put on the belt at the grounded end of the generator. The accumulation of electric charges on the terminal causes it to rise in voltage so that soon several million volts exist between the terminal and ground (the steel outer tank). An accelerator tube is placed below the belt, parallel to it, and is continuously evacuated by large pumps. It is interesting to note that two extremes of pressure exist in the generator. In the steel tank we have ten atmospheres pressure, in the accelerator tube we have one billionth of an atmosphere.

The pressure type generator was completed in 1941 and has many interesting features. Its operators are protected from dangerous X-rays by a concrete wall five feet thick. Access to the generator is obtained through a doorway closed by a three inch steel door. Interlocks are arranged to prevent operation unless the steel door is closed. Voltages are obtained up to 3,000,000 volts and currents of several hundred micro-amperes of electrons can be obtained. This makes the accelerator a most potent source of X-rays. In fact, it was, and *is the most powerful X-ray machine in the world excluding the nuclear reactor at Hanford, Washington!*

This capacity for X-ray and electron production did not go unnoticed. In the fall of 1942 strict security regulations were enforced on all research problems being conducted in the Nuclear Physics Laboratory as the result of a contract with the Office of Scientific Research and Development. Shortly thereafter the newly formed Manhattan District Project assumed charge and did not relinquish the Laboratory until World War II had terminated.

The work done during the war years under the Manhattan District Project has primarily been declassified and may now be discussed. The main objective was to study the effects of radiation, both X-ray and electron, on various forms of matter that would be used in the construction of a nuclear reactor and subsequent chemical extraction of plutonium. Materials such as water, concrete, oil, glass, etc., would all receive fantastically high doses of radiation from the reactor and fission products. Would these materials change? These questions and many others were answered by testing with the radiations produced by the Notre Dame Pressure Electrostatic Generator. This testing program at Notre Dame was essential for the successful construction and operation of the Hanford Plutonium Plant on the west coast.

During the war period Dr. Collins and the writer were on leave for other wartime projects; the latter returned to direct laboratory research after cessation of hostilities. Dr. Walter C. Miller, assistant professor of Physics and a graduate of Notre Dame, is now associated with the writer in conducting experiments in the Nuclear Physics Laboratory. Three nuclear physics graduate students are holders of Atomic Energy Commission Pre-Doctoral Fellowships and a fourth is a recipient of a Research Corporation Fellowship. Many other graduate students here are also involved in various phases of nuclear research.

The objective of the Laboratory is to continue the study of the interaction of electrons and X-rays with matter. Toward this end considerable progress has been made on the nature of X-rays produced in gold targets by high energy electrons. Many new metastable states have been excited by X-rays and electrons leading to a further understanding of the nucleus.

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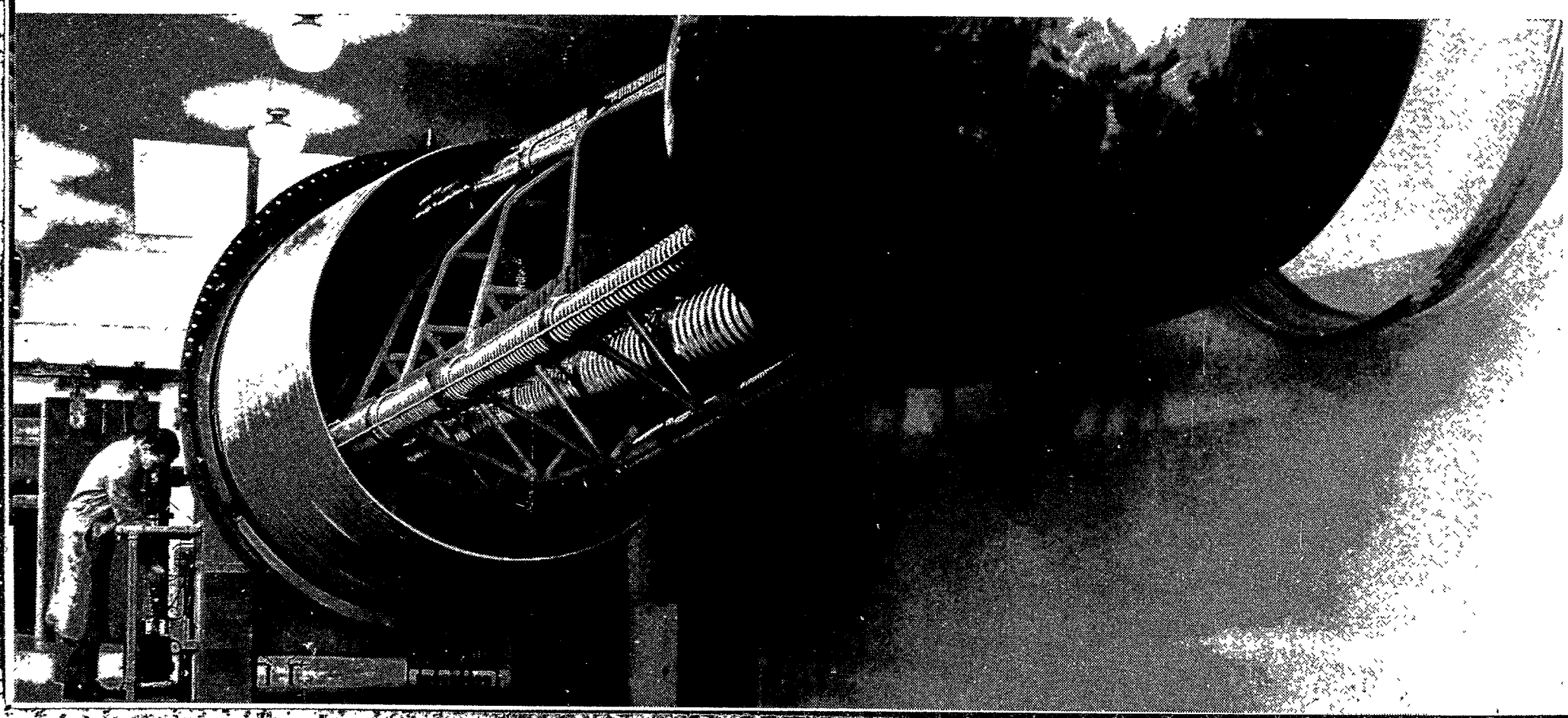
Partially assembled electrostatic generator. Electrons are accelerated through the long vacuum tube.



John T. Frederick, Midwesterner

By EDWARD FISCHER

TWO inches of fine print in *Who's Who* give a thumbnail biography of John T. Frederick in bare, cold outline. The full, warm story of his life would need all of the volume's 2,975 pages, and then some.

Take for instance the line: prof. English, Univ. of Notre Dame. Behind those few words is the story of hundreds of students admiring a man, humble and able, who has devoted his life toward pushing other people forward.

That habit was already strong in him during his undergraduate days at the State University of Iowa. The year he received his bachelor's degree, 1915, he started *The Midland*, a magazine devoted to promoting others. He had noticed that young midwestern writers, if they were honest, did not have a chance in the big eastern magazines. They could not get published unless they made their stories conform to the eastern editors' ideas of the midwest, a land of cowboys and Indians. John Frederick believed that midwestern writers should have a chance to stay at home and develop a regional literature of their own, and he was willing to back this belief with a publication dedicated to offering them an opportunity.

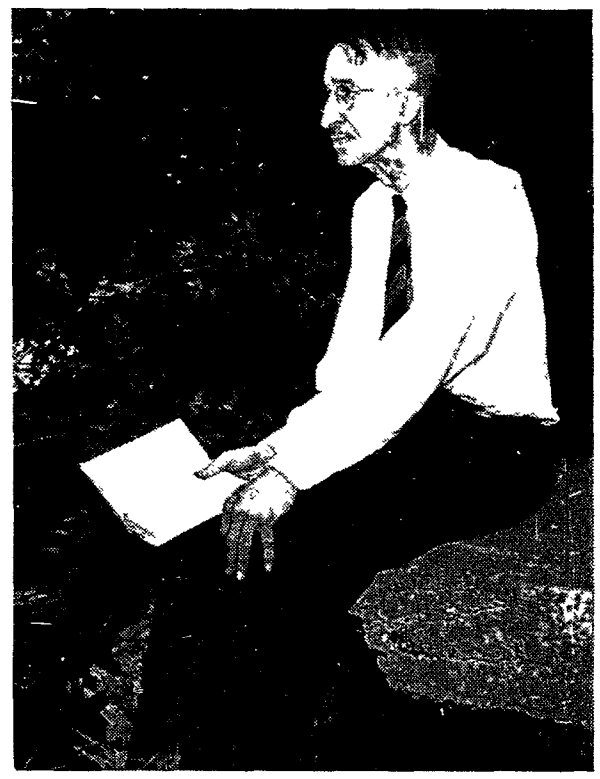
The author is an assistant professor of Journalism at the University of Notre Dame, and received an A.B. degree, here, in 1937. He is a former reporter for the Chicago Herald-Examiner *and the South Bend* News-Times. *During World War II, Mr. Fischer served in the Burma campaign and wrote four books for the War Department. He pioneered the Journalism department, news bureau and alumni publication at St. Joseph's College, Rensselaer, Ind. Besides being a previous contributor to* NOTRE DAME, *he has also written for* America, *national Catholic weekly magazine.*

This publication received great praise and a good deal of space in a book, published in 1946, called *The Little Magazine*. For example: "*The Midland's* enviable record could only have grown out of an admirable personality. That personality is John Towner Frederick. . . . How the quiet unpretentious Frederick slowly built his magazine, manuevered it into an ever more important position, makes an interesting tale. . . . The gradual growth of *The Midland* was not altogether due to hard work. Tact and personal charm drew to the editor many supporters. . . . Frederick preferred to keep himself in the background, to work quietly and let the results speak for themselves."

In these words the book describes the nature of the publication that made John Frederick a pioneer in regionalism: "*The Midland* preferred to speak optimistically of the Midwest land and its people. Though a good many of the magazine's stories were grim and pessimistic, good cheer, laughter, and a love of the land pervaded most of the fiction and poetry."

In its early days the magazine was provincial, but not in the wrong or limited sense of the word. It was provincial in the finest sense—it explored midwestern materials on the universal plane of literature. In its latter days it published almost as much material from other parts of the country as from the Midwest, for John Frederick had observed that writers in other parts were having just as much trouble staying honest as the midwesterners.

The Midland, although it never had a breath-taking circulation, enjoyed prestige. H. L. Mencken once called it "the most important literary magazine in America." Edward J. O'Brien, the short story anthologist, praised it highly year after year and usually gave it 100 percent for literary excellence. No other magazine rated such a high proportion of stories in the O'Brien best-of-the-year collections for so many years.



Mr. Frederick

The importance of the magazine can be shown by pointing out that it discovered Ruth Suckow and published some of the early writings of MacKinlay Kantor, Paul Engle, Phil Stong, James T. Farrell, Marquis Childs, Harry Sylvester, and Richard Sullivan.

Artistically the publication was successful; financially it was a failure. Year after year John Frederick reached deep into his own pocket to keep alive something that existed only for the advancement of others. Through teaching, farming, writing, and lecturing he earned enough to keep the magazine on its feet—until the depression. During those lean years his debt grew at the rate of a thousand dollars a year. What it meant to him to discontinue the magazine can be guessed from a sentence in the final editorial in June, 1933: "For nearly twenty years I have given to it money and time taken from my work as teacher and farmer, from my reading, from my family life; and though the

(Continued on Page 17)

Trustees, Advisory Councils Attend Joint Meeting

Men of Achievement Offer Practical Advice

The University of Notre Dame's Associate Board of Lay Trustees and two advisory councils held their first joint meeting, recently, on the campus.

The two groups which met with the Board of Lay Trustees are the Advisory Council for Science and Engineering and the Advisory Council for Commerce. The three groups normally hold separate meetings twice each year.

Ernest M. Morris, South Bend, Ind., is president of the Associate Board of Lay Trustees, while I. A. O'Shaughnessy, St. Paul, Minn., is vice-president. Edgar Kobak, New York City, is chairman of the Advisory Council for Science and Engineering, and Bradley Dewey, Cambridge, Mass., is vice-chairman. Charles M. Reagan, New York City, is chairman of the Advisory Council for the College of Commerce, and Judson S. Sayre, South Bend, Ind., is vice-chairman.

Many of the nation's most prominent business, industrial and professional leaders are included in the group listed below.

Bottom Row (l. to r.)

O. J. CARON, Pres., O. J. Caron Spinning Co., Rochelle, Ill.; JOHN T. KIRBY, Vice-Pres., W. R. Grace Co., New York, N. Y.; JOHN C. TULLY, Pres., Thomas More Book Shop, Chicago, Ill.; HAROLD S. VANCE, Ch. of Bd. and Pres., Studebaker Corp., South Bend, Ind.; CHARLES M. REAGAN, Executive, Metro-Goldwyn-Mayer Pictures, Inc., New York, N. Y.; EDGAR KOBAK, Business Consultant, 341 Park Ave., New York, N. Y.; REV. JOHN J. CAVANAUGH, C.S.C., Pres., Univ. of Notre Dame; ERNEST M. MORRIS, Ch. of Bd. of Dir., Associates Investment Co., South Bend, Ind.; REV. THOMAS A. STEINER, C.S.C., Provincial of Congregation of Holy Cross, Notre Dame; JUDSON S. SAYRE, Pres., Bendix Home Appliances, Inc., South Bend, Ind.; REV. JOHN H. MURPHY, C.S.C., Vice-Pres. in Charge of Public Relations, Notre Dame; THOMAS W. PANGBORN, Pres., Pangborn Corp., Hagerstown, Maryland; JAMES M. HAGGAR, Pres., Haggar Co., Dallas, Texas; BRAD STOREY, Brandage, Storey & Rose, New York, N. Y.; ROBERT H. O'BRIEN, Secy., Paramount Pictures, Inc., New York, N. Y.; DANIEL P. HIGGINS, Eggers & Higgins, New York, N. Y.

Second Row (l. to r.)

REV. PHILIP S. MOORE, C.S.C., Dean of the Graduate School, Notre Dame; DAN MARTIN, Exec., Hughes Tool Co., Houston, Texas; JOHN A. COLEMAN, Adler, Coleman & Co., New York, N. Y.; FRANK C. WALKER, Business Executive, New York, N. Y.; JOSEPH M. BYRNE, JR., Pres., Merchants & Manufacturers Fire Ins. Co., New York, N. Y.; WALTER DUNCAN, Pres., LaSalle Nat'l. Bank, LaSalle, Ill.; JOSEPH A. LaFORTUNE, Vice-Pres., Warren Petroleum Corp., Tulsa, Okla.; ARTHUR J. SCHMITT, Pres., American Phenolic Corp., Cicero, Illinois; DR. CONSTANTINE McGUIRE, Cosmos Club, Washington, D. C.; PETER C. REILLY, SR., Pres., Reilly Tar & Chemical Co., Indianapolis, Ind.; LELAND STANFORD, Vice-Pres., Sinclair Oil Co., New York, N. Y.; WILLIAM K. WARREN, Pres., Warren Petroleum Corp., Tulsa, Okla.; JAMES E. COSTON, Exec., Warner Bros. Theatres, Chicago, Ill.; DR. KARL E. SCHOENHERR, Dean of Engineering, Notre Dame; WILLIAM P. FEELY, Pres., Great Lakes Dredge & Dock Co., Chicago, Ill.; BERNARD J. VOLL, Pres., Sibley Machine & Foundry Corp., South Bend, Ind.; REV. JOHN J. BURKE, C.S.C., Vice-Pres in Charge of Bus. Affairs, Notre Dame.

Third Row (l. to r)

WILLIAM H. HARRISON, Pres., International Telephone & Telegraph Co., New York, N. Y.; JOHN P. MURPHY, Pres., The Higbee Co., Cleveland, O.; ROBERT H. GORE, Publisher, Hotel Owner and Realtor, Ft. Lauderdale, Fla.; WILLIAM R. DALEY, Pres., Otis & Co., Cleveland, O.; JAMES GERITY, JR., Pres., Gerity-Michigan Corp., Adrian, Michigan; CHARLES HOOK, Ch. of Bd., Armco Steel Corp., Middletown, Ohio; BYRON V. KANALEY, Pres., Cooper, Kanaley & Co., Chicago, Ill.; PETER C. REILLY, JR., Vice-Pres., Reilly Tar & Chemical Co., New York, N. Y.; C. ROY McCANNA, Pres., Bank of Burlington, Burlington, Wisc.; TIMOTHY P. GALVIN, Attorney, Hammond, Indiana; E. C. KLEIDERER, Asst. Exec. Dir., Research & Control, Eli Lilly & Co., Indianapolis, Ind.; LAWRENCE H. BALDINGER, Dean of Science, Notre Dame; EDWARD J. QUINN, Murphy, Lanier & Quinn, Chicago, Ill.; EDWARD J. DOYLE, Pres., Commonwealth & Edison, Chicago, Illinois.

Fourth Row (l. to r.)

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The President's Page

SEVERAL developments worthy of your special interest have taken place here at the University since you read the previous issue of *Notre Dame*. In the closing days of July, the Rockefeller Foundation in New York City decided to grant the sum of $69,000, to augment the University's own contribution to a three-year project that is to promote research in the field of International Relations. Particular attention will be given to the influence of various philosophies, ideologies and ethics upon recent world events. The University gratefully acknowledges receipt of this grant, and expresses a confident hope that the Department of Political Science and of History will make a significant contribution in this important area of human relations.

Earlier in the Summer, representatives of the Atomic Energy Commission negotiated contracts with University officials for the continuation and intensification here at Notre Dame of theoretical studies in radiation chemistry. One provision in these contracts commits the A.E.C. to the installation, at considerable expense, of an electrostatic generator in quarters to be made available by the University. Our present generator will, in the future, be used exclusively by the Department of Physics for its own research projects in atomic energy.

Thus, in two widely separated fields of knowledge, and from two independent and significant sources, recognition has again come to Notre Dame for her academic achievements. Readers of *Notre Dame* know, also, of recent discoveries in the field of medicine by three brilliant alumni — Doctors Charles A. Hufnagel, Robert A. Nelson, Jr., and John A. Vaichulis — which have won nation-wide publicity within a single year.

Alumni and friends of Notre Dame will share our pride in these accomplishments. They have every right to, for it is due to their loyal support, past and present, that these results have been achieved.

The growth of the Science Building Fund continues week by week, and I confidently expect that gifts to be received between now and the feast of Christmas will bring us much closer to our goal.

By this time, most of you have heard that Reverend Robert H. Sweeney, C.S.C., who, as my Executive Assistant, had been charged with supervision of Alumni activities and of Public Relations, including the operations of the Notre Dame Foundation, was obliged, during the Summer, for reasons of health, to accept a less exacting assignment. He has been appointed Vice President of the University of Portland in his home state of Oregon. Reverend John H. Murphy, C.S.C., succeeds Father Sweeney, as Vice President in charge of Public Relations.

All who have come to know Father Sweeney and his work will share the sentiments of profound gratitude that everyone at Notre Dame feels for his friendly and brilliant services during the last three years. Regret is general because of the loss of such a competent and devoted administrator. I know, too, that the University can count on your continued cooperation with Father Murphy, who is already known to many of you. He has set for himself the difficult task of emulating Father Sweeney in his untiring efforts to be of service at all times to you and to the University of Notre Dame.

The Fall enrollment is 4985. Of this number, 375 will be entered in the Graduate School. Again this year, hundreds had to be denied the advantages of a Notre Dame education: many failed to meet entrance requirements; others we could not accept because we had reached our capacity.

Because of the continuing loyal support of our alumni and non-alumni friends, we at the University confidently begin another school year in the important work that God has assigned to us, that of educating youth according to Christian principles in the spirit and guiding presence of Notre Dame.

John J. Cavanaugh, C.S.C.

President, The University of Notre Dame
Director, The University of Notre Dame Foundation

Career Detectives

Guidance and Testing Department Assists Students In Planning For The Future

THIS fall Notre Dame's Guidance and Testing Department enters into its fifth year of providing a specialized service to all incoming students at the University's expense.

Established in 1945, the department was originally started at the suggestion of Rev. Howard Kenna, C.S.C. During the first two years, activities were supervised by Rev. John J. Lane, C.S.C. After Father Lane's transfer to King's College, Edward R. Quinn, Notre Dame '28, assumed charge and has been Head for the past two years.

In the beginning only veterans had access to Guidance and Testing services but later this procedure was modified to include all students attending the University of Notre Dame.

Freshmen are privileged to undergo certain tests for guidance and placement purposes. These test records are valuable sources of information to faculty members, the student being examined, and to prospective employers. Particularly, executives are most anxious to see test records of potential job applicants.

Besides group testing of incoming first-year men, the department administers "exams" for the Law School Admission Test (quarterly), the Medical School Admission Test (semi-annually), and the Navy Aptitude Tests once each year, and does individual counseling and testing throughout the year.

Individual testing, such as is pictured on these pages, is especially beneficial to students who have encountered scholastic difficulties—primarily because of not knowing their true aptitudes and abilities. The counselor can be very helpful in suggesting methods to overcome various weaknesses.

Even the above-average student—one who has attained excellent scholastic grades—can gain new insight into his potentialities, his vocational or career interests. Usually tests are given in small, private booths under the supervision of an experienced counselor. Silence reigns supreme during the examining period.

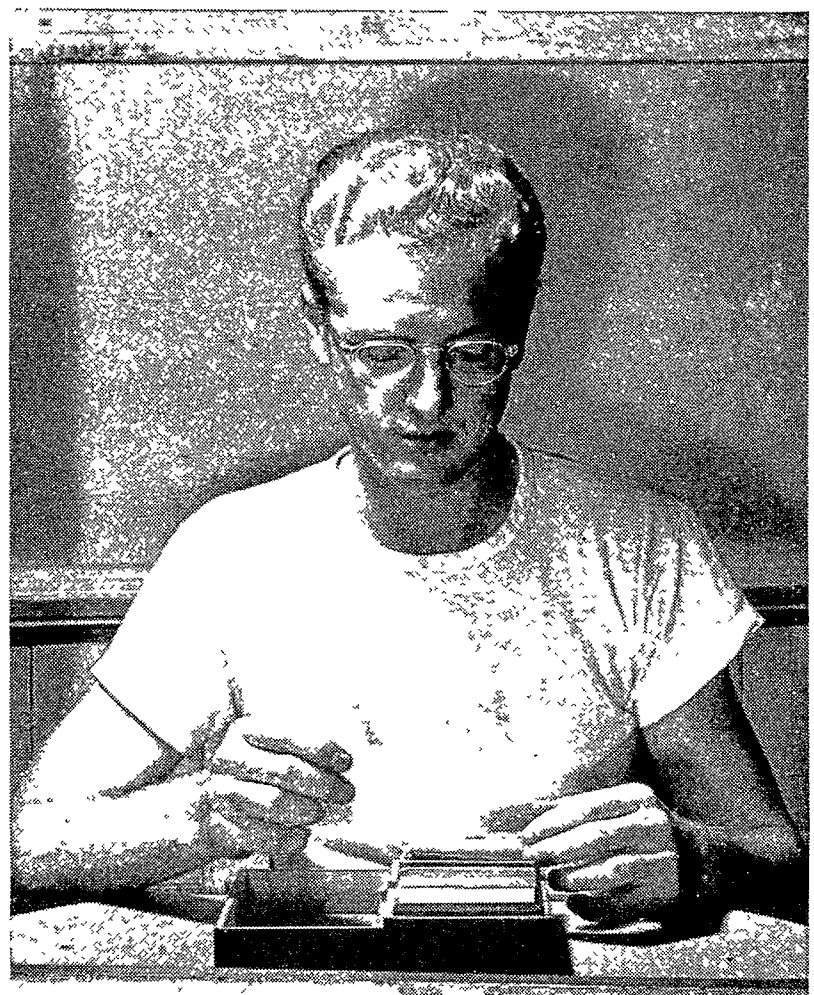
As occupational placement is the natural means to an end of a well-conceived guidance program, the department has been very helpful in cooperating with students seeking employment.

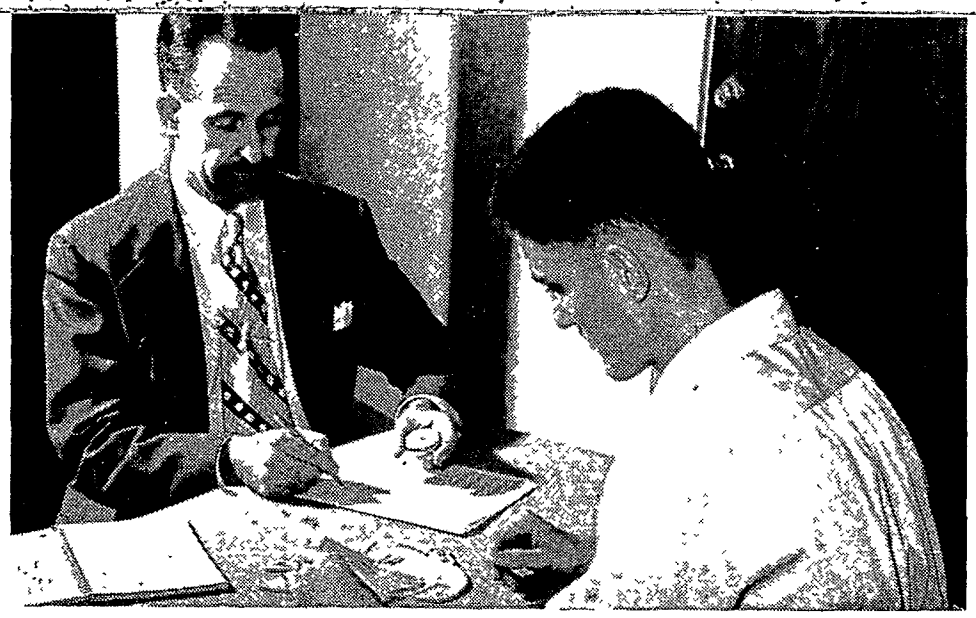
Tests, which are shown here, may be the deciding factors in enabling students to choose, wisely, their career.

Vocational interests are a vital part of the objective test record. Here, two students start their testing programs by recording their interests on a pin-punch test.

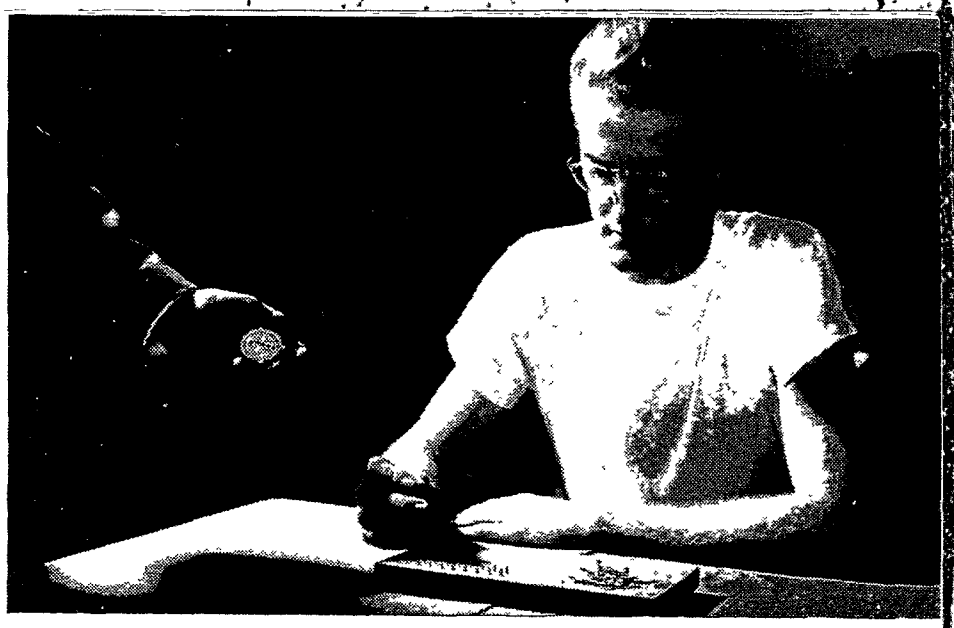
Student is scheduled for a preliminary interview by Miss Komives, secretary. After being assigned to a counselor, he is subjected to various testing and guidance procedures.

The student inventories personality factors affecting educational and vocational choices with this card-sorting test.



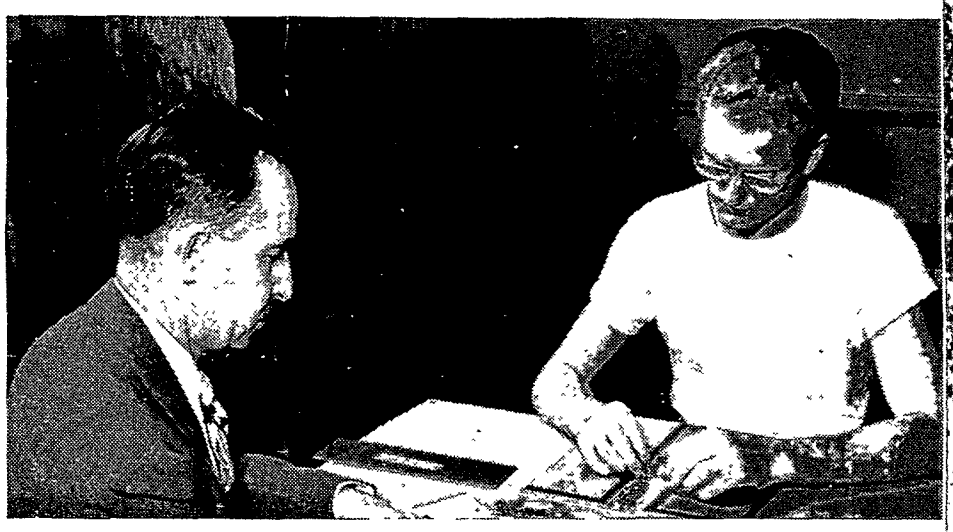


Mr. Quinn, head of the Guidance and Testing Department administers the Wechsler-Bellevue Intelligence Scale to a student in obtaining an accurate analysis of general intelligence.

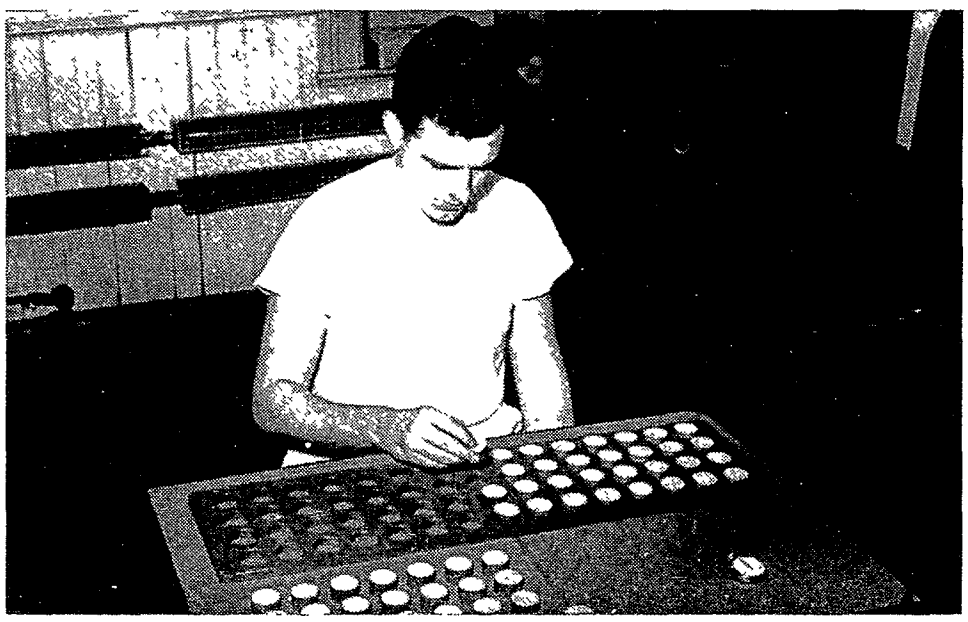


Tweezer Dexterity test is scored well above average by potential doctors, dentists and others using small instruments.

Mr. Willemin, assistant to department head, administers group achievement test via a carefully timed paper and pencil method.



Both the right and left hands are tested in sampling psychomotor reaction with the Purdue Pegboard of Manipulative Dexterity.

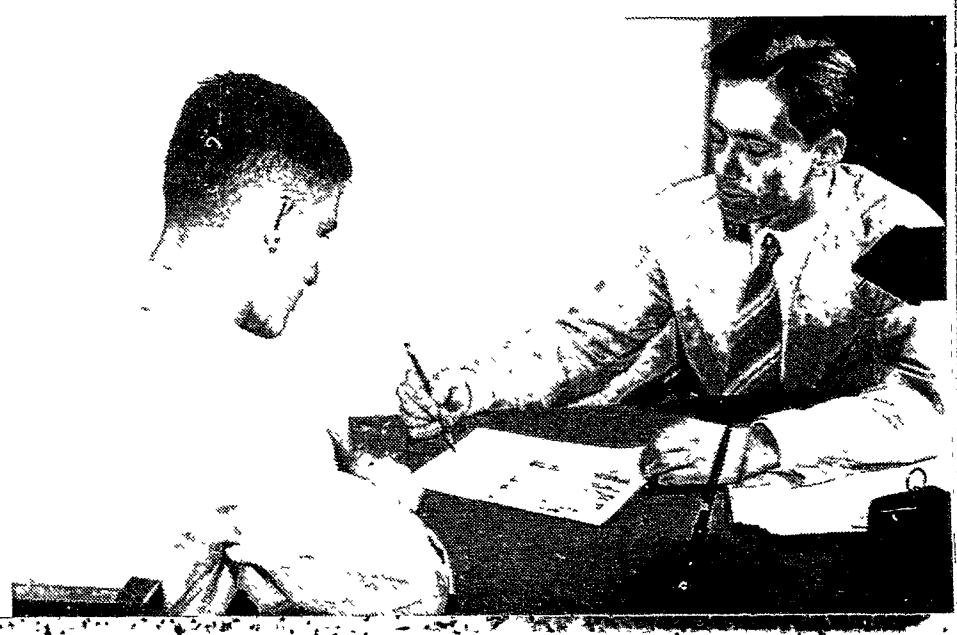


Colored blocks test student's mechanical ability and muscular coordination.

The Miles Vision Test is undertaken by this student in determining ocular control.

Bi-dimensional spatial relations test measures aptitudes possessed by architects, artists and engineers.

Student is informed, during final interview, of results attained in guidance and testing methods.



A Golden Voice in a Golden Era

Excerpts from outstanding addresses of the Rev. John W. Cavanaugh, C.S.C., president of the University of Notre Dame from 1905 to 1919.

THE CONQUEST OF LIFE: " . . . This University is based upon the theory that education is chiefly moral; that character is more than culture . . ."

★

THE MODESTY OF CULTURE: " . . . All real culture is modest. The process of education is largely the transforming of the violence of barbarism into the strength of civilization. . . . This modesty in judging others has a larger side. . . . There are people who set other peoples down as inferior when, as a matter of fact, they are only different. . . . Americans note what seems to them certain forms of public indelicacy abroad, and Frenchmen lift waxed eyebrows in horror at the sight of an American spittoon. . . . True culture is cosmopolitan; true culture is sympathetic and broad-minded. It never mistakes our own tribal customs for absolute perfection . . ."

★

THE EMPTY THRONE: (an address on family life) " . . . My idea of a properly constituted Christian family is five boys and one girl. I have two reasons for this. First, I am connected with a boys' school, and secondly, one girl is as good as five boys anyway. . . . Whenever I see a woman clasping a dog to her bosom where a baby ought to be, I always think that the dog is in bad company . . ."

★

THE ROMANCE OF BIG BUSINESS: " . . . There are three chief tests by which the civilization of any people may be tried. One is the respect it manifests for human life as exemplified in the care it takes of its children; another is the reverence it pays to women; and the third is the esteem in which it holds human labor . . ."

★

WHAT SHALL A MAN GIVE IN EXCHANGE FOR HIS SOUL?: " . . . This University answers that life in all its fulness and sweetness is open to you; that liberty of heart and mind and body are yours; that the deepest fastnesses of thought and the darkest depths of philosophy are your free hunting grounds, but that faith shall go before you as a light and Christ will be with you as a guide in all your searching and striving. This school exists in order that Christian youth may have the best education in the land without the monstrous price of doubt and desolation and despair."

(Sixth in a series of articles on the history of Notre Dame, adapted from the book NOTRE DAME, ONE HUNDRED YEARS, by Rev. Arthur J. Hope, C.S.C.)

SIX years now marks the maximum period of the administration of a President of Notre Dame, two three-year terms under the religious-superior clause of Canon Law. This was not always so.

From 1905 until 1919, the Rev. John W. Cavanaugh, C.S.C., a graduate of Notre Dame's own Class of 1890, presided over the destinies of a small Catholic school that emerged from the vivid kaleidoscope of these years as a University established in its new role of greatness.

It will be difficult to study these years in a few paragraphs because from each paragraph there will stem the materials for volumes. But if we can grasp just some of the varied significance of the greatness of these years, that were even then sometimes lost like the sturdy wood of a rose trellis in the beauty of the blossoms, we will know that Notre Dame's greatness is not the impact of an overnight miracle but the flow of genius through a century of service.

It has been alleged of Father Cavanaugh that he could charm friends by the score, but that it remained for his successors to create needed benefactors for Notre Dame. It can be noted now that somehow during Father Cavanaugh's regime the first of the less Spartan residence halls was constructed — named after Rev. Thomas E. Walsh, C.S.C., and constituting the first "gold coast." And in 1917 Father Cavanaugh dedicated, as a part of the Diamond Jubilee of Notre Dame, the beautiful Library building that then seemed such an adequate monument to the phase of culture he loved most, books.

And perhaps this is the logical spot in history to note that actually it was not until after Father Cavanaugh and the Diamond Jubilee that Notre Dame entered upon its first endowment drive. Seventy-five years of inspiring history in the annals of American higher education, without a dollar of endowment! History indeed.

A Golden Era at Notre Dame

An era (1905 - 1919) of brilliant men and active boys, of debating and football championships, of poets and warriors, of academic progress and world war, all administered by the most magnetic of the Presidents

Athletics achieved unprecedented respectability. They had never been a source of enthusiasm to Father Cavanaugh, who, as a student, wrote one of the gems of vitriol that he distilled on occasion in describing the college athlete. But faced with a growing interest, and in 1909 the famous Championship football team of the West which defeated Michigan in a series not resumed until 1942, Father Cavanaugh brought Jess Harper from Wabash, then a power in Mid-West athletics. Harper, a Stagg alumnus himself, gave Notre Dame a new regime of athletic regularity and a conformity and contacts which rapidly improved its athletic relations until in 1913 the famous Army series was launched. When Harper resigned in 1918 he was succeeded by a pupil-graduate, and assistant coach, Knute K. Rockne, and Notre Dame's football history was already national.

Scholars found Father Cavanaugh's administration conducive to rapid development. Father Julius Nieuwland, the scientist, and his new publication "The American Midland Naturalist," rose to prominence. Dr. John M. Cooney, soft-spoken Kentucky journalist, through a benefaction from Chicago's Jewish philanthropist, Max Pam, launched at Notre Dame the school of journalism that has poured strong men into the stream of America's printer's ink. Father Charles L. O'Donnell, C.S.C., who edited the first student yearbook in 1906, developed his poetry and his teaching and his priestly life, and in 1917 became one of the six brilliant priests that Notre Dame contributed as chaplains to the World War that decimated Notre Dame's students.

Father Cavanaugh attracted many notable men of those years to the campus. Father John Talbot Smith was a close personal friend. Monsignor Robert Hugh Benson, Wilfred Ward and Cecil Chesterton were the vanguard of English genius of later years. William Jennings Bryan and Father Cavanaugh occupied the stage of Washington Hall in a memorable evening of oratory.

It was also the era of the establishment of a strong lay faculty. This was a group of able and devoted men whose teaching was almost as much a vocation as the religious with whom they worked. Limited finances resulted in a salary scale far below standard. But in the convivial company of the President of the University, enjoying the praise that he bestowed freely, family budgets faded in the rich glow of Christian education. This was, too, the era of Brother Florian, Brother Cajetan, Brother Bonaventure, Brother Alphonsus, Brother Leopold, and others of that historic group who made up the University.

In April of 1917 with the outbreak of World War I, Father Cavanaugh's University was quick and complete in its proof that Notre Dame's patriotism was not put on and off like an academic robe. Young men poured from its classrooms. Faculty and priests went from its classrooms and cloisters. And Father Cavanaugh offered all of its facilities, as did Father Hugh O'Donnell, his protege and admirer and successor, when another great war faced Notre Dame's world in 1941. Notre Dame became one of the sites of the Student Army Training Corps. Fifty-six young men proved with their lives, as did the 327 young men of World War II, that Notre Dame is sincere in its belief that men are endowed by their Creator with certain inalienable rights, wherever in this world they may live.

The climax of Father Cavanaugh's long administration was the glorious Diamond Jubilee that in the midst of a World War focused on Notre Dame the attention of a public which now realized that here was definitely a great Catholic University.

Cardinal Gibbons, Rev. Walter Elliott, the Paulist preacher and a Notre Dame alumnus, the great Apostolic Delegate (later Cardinal) Bonzano, Admiral William S. Benson, who that year was Laetare Medalist, the Paulist Choir under Father Finn, Archbishop (later Cardinal) Mundelein, Catholic University's Rector Bishop Shahan, the orator Bourke Cockran, Archbishop Hanna, Indiana's Governor Goodrich, and Joseph Scott, still one of the Church's stalwarts, were all headliners in that June of 1917.

There is no doubt in the mind of any Notre Dame man that Father John Cavanaugh and his years as president left an impact of culture and contact on the history of Notre Dame that did much to speed the more practical developments of the years that followed.

football forecast

By RALPH WRIGHT

The author is a senior, majoring in Journalism and will graduate in January, 1950. He is sports editor of the "Scholastic", Notre Dame student news weekly. Mr. Wright served with the U. S. Army in the Pacific area for two years during World War II. He intends to enter the newspaper field, and is from Elyria, O.

NOTRE Dame's status in the college football field has changed very little this season in at least one respect. The Irish are still the team to beat for national honors. However, most of the people who make a living at rating football teams think that Coach Frank Leahy's eleven will be beaten—but they won't venture to say just who can do it.

The schedule is definitely tougher this fall; Notre Dame meets title favorites from the Southern, Southeastern, Southwest and Pacific Coast conferences. And there are battles with four always-tough Big Ten schools, besides improved Navy and darkhorse Washington. Then too, seven regulars from the 1948 squad aren't around anymore.

With all these obstacles to overcome, the Irish can still be as good as they were last year; Frank Leahy broke down and admitted it in Cleveland this past summer. The backfield losses shouldn't be missed, the "tackle weakness" seems exaggerated and the guard crop is good despite the departure of All-Americans Bill Fischer and Marty Wendell. Notre Dame has 28 lettermen, eight of them seeking their fourth varsity monogram, and the freshmen came through with some real prospects.

The crucial T-quarterback spot rests in capable hands. Talented Bob Williams has all the requisites and poise, too; Coach Leahy isn't the only person who thinks the Baltimare junior may be the best under-the-center man in the country. Finding a dependable replacement is something else, though. Long John Mazur of Plymouth, Pa., is a sophomore sharpshooter, but, naturally, he needs seasoning.

Even Mr. Leahy doesn't worry too much about the rest of the backfield. A flock of super ball-toters will help keep Notre Dame as the most powerful land operative in the nation. Fancy-stepping Bill Gay and Frank Spaniel, running star of spring practice, dominate left half with hurdler Leo McKillip making for speed in the reserve ranks. Sophomore John Petitbon stands out here too, but the fleet New Orleans lad figures more as a defensive back right now (probably the No. 1 safety man).

All-American Emil Sitko, former right half, has been moved to fullback and continues as just about the fastest-starting, hardest-hitting backfielder anywhere. His counterpart, Larry Coutre (also red-headed and stocky), is speedy, powerful and experienced. More colorful than either of the redheads and a sure crowd-pleaser is sawed-off Bill Barrett, the much-talked-about sophomore from Fenwick High in Chicago. Barrett fairly sizzled all last spring and starred in the rout of the Old Timers.

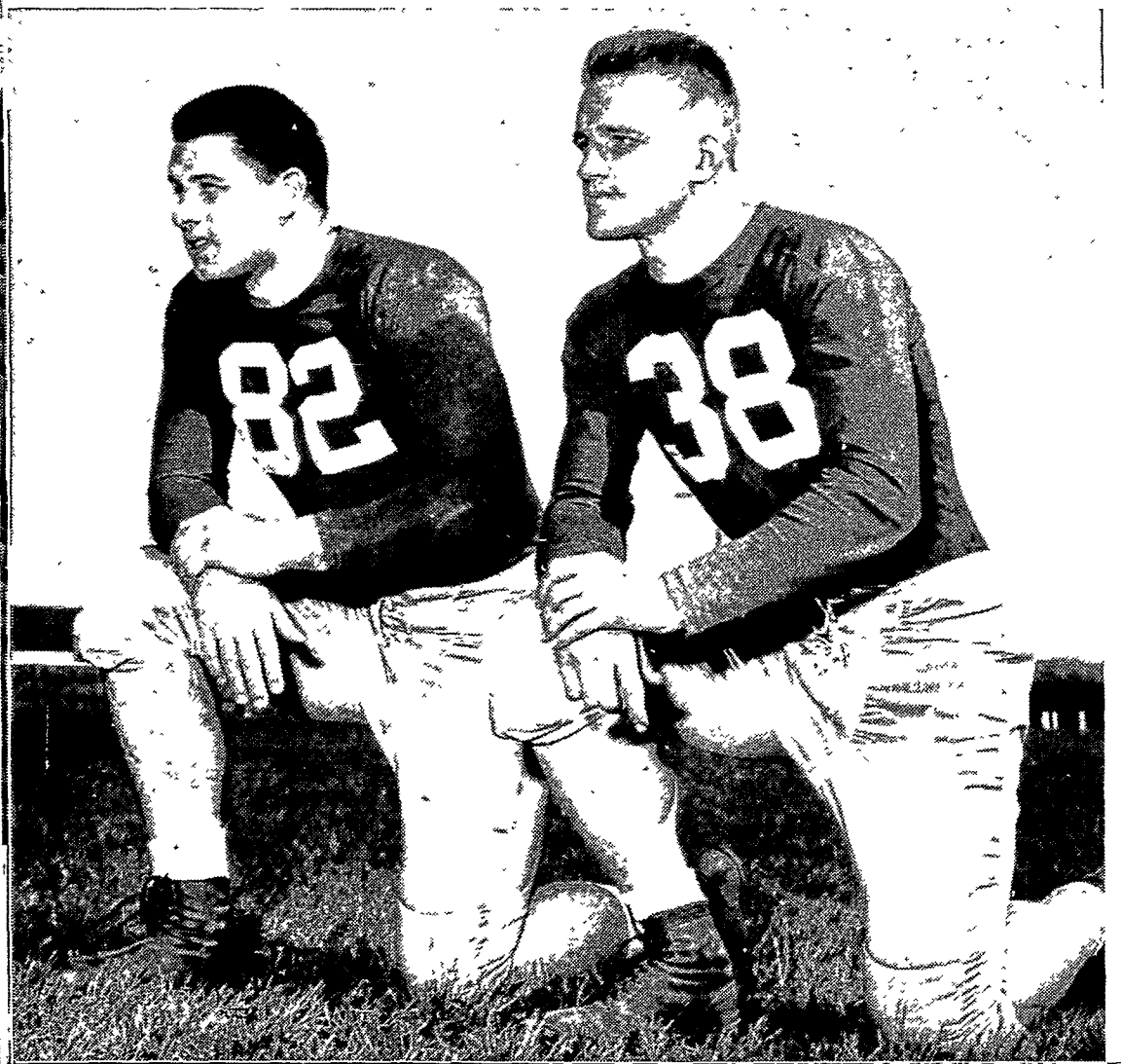
Mike Swistowicz will aid Sitko at fullback. Jack Landry, switched from half to full, will be a big help. Frosh enter the fullback picture also; Jack Bush has speed and power, and Sam Abbott can punt as well as back the line.

Quantitatively and qualitatively, the ends and center have it. Right end belongs to the best in the business, Co-Captain Leon (The Monster) Hart. He's aided by Doug Waybright. Left end appears safe with Bill Flynn and Bill Wightkin leading the way; they're experienced and gifted.

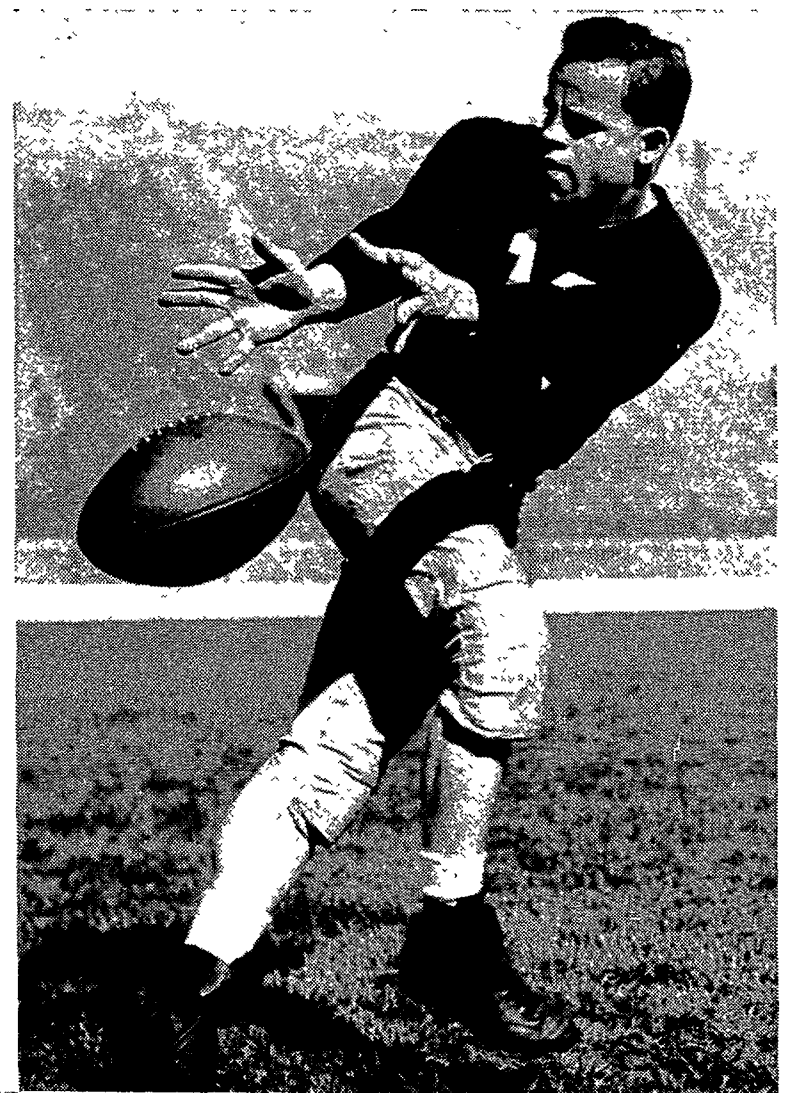
Vicious Jerry Groom is the defensive center and line-backer whereas sharp-blocking Walt Grothaus takes over the pivot post on offense. They're assisted by newcomers Jim Hamby and Byron Boji.

The tackles survived last year, and it's difficult to see why they should be weaker now. After three fine years at left end, Co-Captain Jim Martin moved to left tackle and does just as well. Ralph

Co-Captains Leon Hart (left), Jim Martin



Emil Sitko



Bill Barrett

McGehee, a starter in 1948, is back, but gigantic Bob Toneff should start most of the time. Toneff rates as one of the top line prospects in years.

All the consternation about the guards is over the loss of Fischer and Wendell, not over a lack of good material at the position. Lettermen Frank (Rodney) Johnson, Fred Wallner (a converted fullback), Bob Lally and Steve Oracko will share the duties with soph star, Paul Burns, an Athens, Pa., lad.

Notre Dame has what it takes to run that unbeaten string to 38. But the defense must stop the likes of Charlie Justice, Doak Walker and Eddie Price. Coach Leahy says the odds are against Notre Dame and they are. Yet, if the Irish leave Dallas in December as the undefeated, untied champions of the nation, nobody will be too surprised.

Bob Toneff

ATOM SMASHING

(Continued from Page 6)

The Laboratory's program is partially supported by the Office of Naval Research and by grants from the Research Corporation. When the proposed $1,750,000 Science Center is built on the Notre Dame campus it will offer additional facilities for important expansion in the Department of Physics.

Atom smashing is a physical reality that can have a far-reaching effect on whether we live peacefully, or otherwise, in this streamlined 20th Century!

GERMAN NATURAL LAW INSTITUTE MODELED AFTER ND PROJECT

The Natural Law Institute at the University of Notre Dame will serve as a model for a similar Institute to be inaugurated in Cologne, Germany, according to a letter received by Dean Clarence E. Manion, of the Notre Dame College of Law.

The proposed Natural Law Institute in Cologne, according to the letter, is to constitute one of the steps towards the establishment of a Catholic University in North-Rhine-Westphalia. All universities in Germany at present are state institutions.

The Natural Law Institute at Notre Dame, unique in modern times, was established in 1947, and is held annually at Notre Dame in order to help increase the emphasis of the Natural Law as the basis of life, liberty and all other human rights. Dr. Heinrich A. Rommen, of the College of St. Thomas, St. Paul, Minn., will collaborate in the Cologne Natural Law Institute as a corresponding member. Dr. Rommen was one of the principal speakers at the 1948 Natural Law Institute at Notre Dame.

ON THE COVER are portraits of six young Notre Dame graduates, 1948-49. They typify the thousands of students, representing *all* races and creeds, who have enjoyed tolerance and good fellowship at the University of Notre Dame since its founding by Father Edward Sorin, C.S.C., 107 years ago. Included in the group are: John B. Alfieri, Bronx, N. Y.; David S. Greenberg, Brooklyn, N. Y.; Raul S. Ibanez, Arequipa, Peru; James J. Klockenkemper, Batchtown, Ill.; Thomas J. McCarthy, Erie, Pa., and Francis J. Machnikowski, Calumet City, Ill.

CORPORATION GIVES FELLOWSHIP FOR RESEARCH IN ECONOMICS

The Kimberly-Clark Corporation, in Neenah, Wisconsin, recently gave a $1,500 fellowship in the field of Economics to the University of Notre Dame. It will be known as the Kimberly-Clark Fellowship and will be for the current academic year.

DEAN McCARTHY CHOSEN FOR PROMINENT COMMITTEE POST

Dean James E. McCarthy, of the College of Commerce at the University of Notre Dame, has accepted an invitation to serve with the Committee on Advertising of the United States Chamber of Commerce for 1949-50.

This Committee advises the national chamber on ways to broaden the interest in advertising by bringing pertinent advertising information to the attention of businessmen, chambers of commerce and trade associations, and functions through the Domestic Distribution Department. The committee meets six times per year in New York City.

RENOWNED BRITISH CHEMIST DELIVERS NIEUWLAND LECTURES

Professor Eric K. Rideal, one of the most recognized British chemists of modern times, delivered the annual Nieuwland Memorial Lectures this Fall at the University of Notre Dame.

Dr. Rideal, who since 1946 has been director of the Davy Faraday Research Laboratory at the Royal Institution in London, will discuss various aspects of surface action.

The Nieuwland Lectures were established in 1946 by the University to honor the memory of the Rev. Julius A. Nieuwland, C.S.C., pioneer Notre Dame scientist who discovered synthetic rubber.

NOTRE DAME SCIENTISTS ELECTED TO CHEMICAL SOCIETY OFFICES

Two University of Notre Dame scientists were elected to high offices of the American Chemical Society at the annual meeting of the Society which closed recently at Atlantic City, N. J.

Dr. Kenneth N. Campbell, who currently is engaged in cancer research at Notre Dame, was elected Chairman of the Division of Medicinal Chemistry of the American Chemical Society.

Dr. Milton Burton, Director of the Radiation Chemistry Project at Notre Dame, was named Chairman-Elect of the Division of Physical and Inorganic Chemistry of the Society.

ND's First A.B. Degree Class of '49

By JOHN P. CARROLL

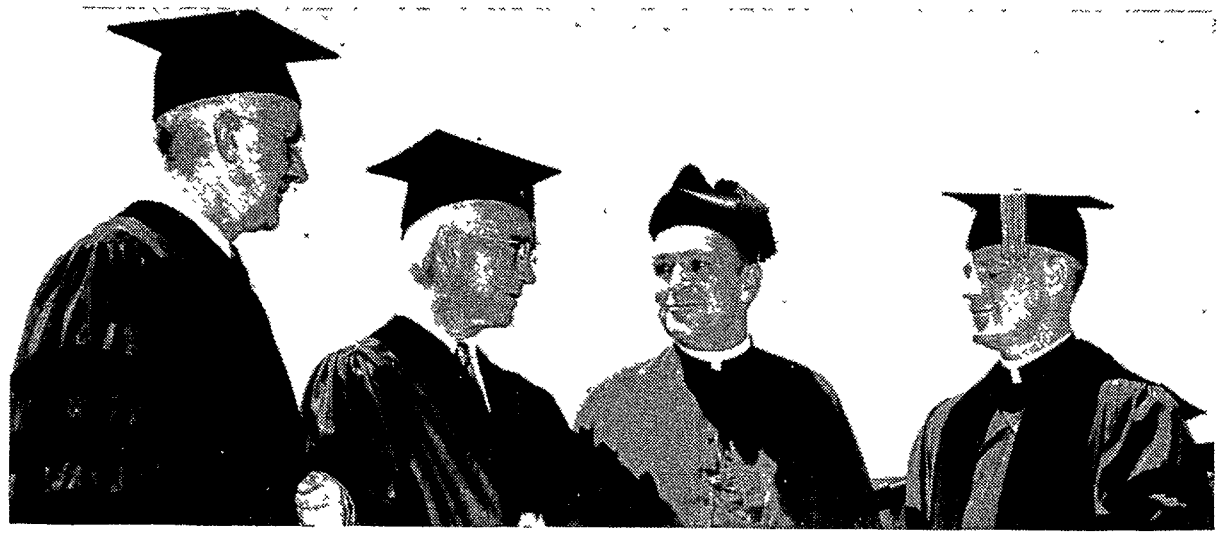
The author recieved an A.B. degree from Notre Dame in the '49 graduating class. His home is in Lansing, Mich., and he was active in the Press Club and Knights of Columbus while a student at the University.

COMMENCEMENT at Notre Dame was initially established 104 years ago in August, 1845, while this past summer marked the hundredth anniversary of the University's first bachelor's degree being awarded to Neal H. Gillespie, a seventeen-year old student from Lancaster, Ohio. He was just 14 when he came to Notre Dame. Before he died his name rightfully earned a page in the campus history books for more reason than just being the first full-fledged graduate.

Gillespie was a good student, favorably impressing Father Sorin; but he was daring enough to use the forbidden tobacco occasionally. Discipline was really rough then—marching to and from classes, imposed periods of silence for study and prayer—and it wasn't at all uncommon for ND "men" to run away. But Neal Gillespie stayed, and by the time he received that first degree in 1849 he was thinking seriously of the priesthood.

Neal entered the Congregation's novitiate in the fall of 1851, and while he was there helped clear the ground for a new building, on the present site of Holy Cross Seminary. Three years later, in 1854, he was sent to Rome where he completed his studies in theology, and was ordained there in 1856.

When Father Gillespie returned to Notre Dame after his ordination he was immediately appointed Vice-President and Director of Studies. At that time the duties of the Director of Studies included the handling of discipline, and Father Gillespie sometimes ran afoul of other higher-ups because of his leniency —possibly induced by his own experience as a student. He even went so far as to allow students to go for walks without being accompanied by a prefect.



Honorary degree recipients George W. Strake, Houston, Tex., John S. Burke, New York City, and Rev. Paul Bussard, St. Paul, Minn., talk with Father John J. Cavanaugh, C.S.C., at 1949 Commencement.

During this time he was overseer of student debating, dramatics, oratory, and musicals. And he helped set up the first campus literary magazine, a manuscript affair that was read publicly to all students in study hall.

In 1859 he went to the College of St. Mary-of-the-Lake in Chicago for a year as President. But in 1860 he was back at ND as Vice-President. In 1863 he went to France as the American representative of the Congregation of Holy Cross.

While he was there Father Sorin started a Catholic magazine, the *Ave Maria*. In the beginning it was operated under the joint direction of Father Sorin and Sister Mary of St. Angela. Then in 1866 Father Gillespie was called home to take charge, and he settled down to the work that was to keep him occupied the remaining years of his life.

Father Sorin's original idea had been to save money by using translations from Catholic magazines published in Europe. Father Gillespie modified this idea, somewhat, by soliciting articles from Catholic writers in this country. Orestes A. Brownson, America's greatest Catholic philosopher in the 19th Century, now buried in the Basement Chapel on the Notre Dame campus, was his leading contributor.

Father Sorin never felt that the editorship was an eight-hour-day job, and usually supplemented it with some other part-time position. At various times in the next few years Father Gillespie was Master of Novices, Prefect of Discipline, Chaplain of St. Mary's, and frequently a traveling public relations representative for the University. Evidently he was gifted with a remarkable personality and a fine sense of humor. In one of his letters he tells of taking his dog to a meeting of the Order's "Local Council," where novices were presenting themselves for permission to take their vows. He says the canine's antics were quite funny, but the dog acted as a gentleman through the whole proceedings.

By early 1874 the strain of too many jobs was affecting Father Gillespie's health and he was relieved of the editorship. His health continued to get worse, and on November 12, 1874 Neal H. Gillespie, C.S.C., A.B. (ND '49), died at St. Mary's Convent — after contributing much more to Notre Dame than just his name on the first diploma.

FIVE VICE-PRESIDENTS ON NOTRE DAME STAFF

Creation of four new vice-presidential positions at the University of Notre Dame was recently announced by the Rev. Thomas A. Steiner, C.S.C., Provincial of the Indiana Province of the Priests of Holy Cross.

Under the new administraive organization, the University will have five vice-presidents, each charged with his own specific duties. Previously, only one vice-president was included in the administrative organization of the University.

Father Steiner also announced that the Rev. John J. Cavanaugh, C.S.C., president of Notre Dame since 1946, will continue in the same capacity for another three-year term.

The Rev. Theodore M. Hesburgh, C.S.C., was named Executive Vice-President, Rev. John H. Murphy, C.S.C., was selected as Vice-President in Charge of Public Relations, Rev. Howard Kenna, C.S.C., was appointed Vice-President in Charge of Academic Affairs, Rev. John J. Burke, C.S.C., was named Vice-President in Charge of Business Affairs, and Rev. Joseph A. Kehoe, C.S.C., was appointed Vice-President in Charge of Student Welfare.

The Rev. Robert H. Sweeney, C.S.C., became Vice-President and Dean of Arts and Letters at the University of Portland. He has been Executive Assistant to the President at Notre Dame.

ND STUDENT ARCHITECTS WIN NATIONAL HONORS

Seven students and one alumnus of the Department of Architecture at the University of Notre Dame won national recognition for designs submitted in the recent Small Mission Church Competition sponsored by the National Catholic Building Convention and Exposition.

The Notre Dame architects won prizes in the competition over a field of 169 collegiate and practicing architects. The contest was conducted to encourage functional and economical designing of rural parish churches.

Joseph J. Sherer, of Milwaukee, Wis., a Notre Dame graduate of 1943, won second prize in the nationwide contest. Third prize was awarded to William Ruoff, a Notre Dame architect student from St. Louis, Missouri.

Other Notre Dame students who received honorable mention in the contest were Jaime Castiello, Guadalajara, Ja., Mexico; Joseph Gasparella, Vandergrift, Pa.; Richard Kirk, Schenectady, N. Y.; Charles Murphy, Natick, Mass.; Carl Nilsen, Westfield, Mass; and Louis Noetzel, Detroit, Michigan.

JOHN T. FREDERICK, MIDWESTERNER

(Continued from Page 7)

money and the time have been alike sometimes needed and hard to spare, my personal rewards have been great."

Such unselfishness—so much a part of John Frederick, editor—is one of his outstanding characteristics as teacher. Students feel the warmth of his personality and admire his capacity for kindliness. Whenever a student brings a manuscript to him for criticism, John Frederick always makes it seem that the student is doing him a favor in seeking his advice

His first teaching was done at the State University of Iowa, where he received his M.A. in 1917 and was elected to Phi Beta Kappa. It was there he introduced the first course in contemporary American literature ever taught in the United States. For two years he was head of the English department at Moorhead Teachers College, Moorhead, Minn., and later joined the faculties of the University of Pittsburgh, Northwestern, and Notre Dame. For several years, beginning in 1930, he was on the Northwestern and Notre Dame faculties simultaneously. He shuttled back and forth doing part-time teaching on each campus.

His knowledge of American literature, and especially of midwestern regional literature, took him as a lecturer to many colleges and universities — Dartmouth, Columbia, Trinity, Syracuse, Illinois, Minnesota, Missouri, Ohio, and Michigan, to name just a few.

In the midst of all this activity for others, John Frederick found time to do a few things himself. Besides short stories and magazine articles, he wrote two novels with midwestern farm backgrounds, *Druida,* in 1922, and *Green Bush,* in 1925.

The old habit of doing things for others set him to turning out anthologies. In that way he promoted writers who appeared in the collections and provided readers with a wealth of material that they would have had neither the time nor the inclination to dig out for themselves. *Stories from the Midland* appeared in 1925; *Thirty-four Present Day Stories,* in 1941, and *Out of the Midwest,* in 1944. The two volume set of *American Literature* — that he selected and edited along with Joe Lee Davis. of the University of Michigan, and Frank Luther Mott, of the University of Missouri — was published by Scribner's in 1948. His text, *Handbook of Short Story Writing,* published in 1925, is still in print in its fourth edition. He collaborated with the Rev. Leo L. Ward, C.S.C., head of the Department of English at Notre Dame, on two other texts, *Good Writing,* in 1934, and *Reading for Writing,* in 1937.

As a critic John Frederick continued to work hard for others. He gave readers the benefit of his cultivated taste and sound judgment, and he encouraged writers worth encouraging. When the Chicago *Sun* was started in 1941, he began a weekly column in the book supplement. At the same time, he took over the monthly book department in *Rotarian,* a department handled for many years by William Lyon Phelps.

His national reputation as a critic grew from 1937 until 1944 during which years he did a weekly half hour broadcast called *Of Men and Books* over CBS network. In connection with his comments on current books he usually presented a guest author on the program; among them were Aldous Huxley, Archibald MacLeish, Thomas Mann, Franz Werfel, Sigrid Undset, Eric Maria Remarque, John Dos Passos, Robert Frost, and Stephen Vincent Benet.

During the war, John Frederick devoted most of his time to farming because, "The things I was equipped to teach were not particularly needful in a war program." He went to his 1,500-acre farm at Glennie, northern Michigan, and pitched into the job of raising cattle with the same enthusiasm he had put to editing, teaching, and writing.

Most of his days now are spent on his farm. He comes down to Notre Dame each semester for several short periods of concentrated teaching in contemporary fiction and American literature, but he is giving himself a little more time these years than he ever did before. He and Esther, his wife, are having fun with their hobby, flower gardening; they are specializing in lilies at present, some thirty varieties, and they are also collecting books on gardening, old and new.

John Fredericks's father at 83, carries a great deal of the burden of running the stock farm. His son, John, lives with the two grandchildren nearby. The other son, James, is at Columbia, majoring in Oriental history.

Farming spares John Frederick enough time for writing; he is at present working on a novel and a book of criticism. Such work will keep the space growing beneath his name in *Who's Who,* but no matter how much it grows it will never tell the whole truth about him. Each added line will only testify that such a drab, cold listing of goals gained is a most inadequate way of measuring the stature of a man. Especially when a man of big deeds has a soul that's bigger.

Vetville Crusaders

The Vet Gazette Voices An Effective Editorial Policy

By ROBERT J. VIERHILE

ALTHOUGH a newspaper youngster of only 2½ years, the *Vet Gazette*, weekly journalistic gem of the nearby campus community housing 117 married veterans of World War II — and their families — has matured into one of the most successful crusading publications in Indiana.

Into this four-page, 8-by-10 inch, mimeographed paper have gone the complaints, the wants, and the hopes of Vetville's 234 inhabitants. Since April 30, 1947, four *Gazette* editors have stumped editorially for almost everything under the Indiana sun—telephones, bus service, playgrounds, baby sitters, apartment-size refrigerators, police protection, and food cooperatives among others. And, in almost every case, the power of the mimeographed Press has paid off.

In the initial issue of *Vetville News* (the name was changed to the *Vet Gazette* nine issues later), Editor John V. Hupf told his readers that his paper's job was "to make Vetville a better place to live in, a community to be proud of." That touched off the *Gazette's* first crusade, a tussle with the Indiana Bell Telephone Company to get phones installed in at least every third unit in the village. Hupf, in a page one editorial, called on the veterans and their wives to meet and town-hall the plan.

This flurry attracted a lot of attention. Editor Hupf wrote in the next issue that a compromise was quickly effected between Vetvillagers and the telephone company representatives. The latters' stipulation was "you'll get what you want but please keep off our necks."

Thus, with his first journalistic crusade a complete success, Editor Hupf thanked everyone for their cooperation and ended his editorializing with this gentle request: "Please, please keep off their necks."

The telephone situation popped into print again during Chuck Perrin's first term as *Gazette* editor in October, 1948. Several wives complained to him that, because the phones were hooked up on the party-line system, they had missed prizes on some of the local telephone quiz programs.

Editor Perrin answered the complaints with an editorial entitled "Give Them a Break." Said he: "Two citizens have missed an opportunity to participate in South Bend radio quiz prizes, and all because their telephone lines were busy at the time. It is the duty of every housewife to keep the line clear from 8:15 to 8:30 a.m. and from 5:00 to 5:15 p.m."

Then there was the bus situation. The nearest bus stop was at the south end of the Notre Dame campus, a half mile from Vetville. For mothers coming back from a South Bend shopping spree with both arms full of bundles — and babies — the hike across the Notre Dame campus to Vetville was as rugged as washing a ton of diapers.

For two months Editor Hupf plugged away in his editorial columns for extension of the Notre Dame bus line. In his May 16, 1947, edition of the *Gazette*, Hupf told his readers: "From the 31st of May on we shall ride in style. After a long, hard struggle with the Northern Indiana Transit Company, we have just received word that Vetville would be served with regular bus transportation."

Editor-in-Chief Jim Coyle checks some "hot copy" for the next issue with Sports Editor Bob Kienel.

The author received an A.B. degree, majoring in Journalism, from Notre Dame in the June, 1949 graduating class. He is now reporting for the Rochester (N. Y.) Democrat and Chronicler. *Mr. Vierhile previously contributed to* NOTRE DAME, *and formerly lived in Naples, N. Y.*

Roving reporter Doris McGraw (right) gets opinion from Mrs. Billis on a new Vetville project. Jackie Billis (ND, '71), one of the GAZETTE'S younger readers, tosses a smirk at the cameraman and mutters, "Let's get rolling, Mom — I wanna see the ball game."

Chaplain Paul Bailey, C.S.C., pays a call to the Winn family in Vetville, U.S.A. Mr. and Mrs. John Winn have the largest family in the village.

Hupf, the crusader, was off on another journalistic jaunt in his next issue. He wrote that the Villagers should have some place to meet socially and hold council meetings. This time, the Reverend Theodore Hesburgh, C.S.C., then Vetville Chaplain, now Executive Vice-President of Notre Dame, took up the cry and received governmental sanction to finance the building. Before the paint was dry on the new one-story hall, the *Gazette* bugled to its readers that "the Vet Rec Hall will be christened this Friday with a pot-luck dinner."

Succeeding editors kept the *Gazette's* crusading policy rolling in high gear. When Chuck Golden took over in September, 1947, Vetville was plagued with speeders, small boys stealing food from back porches, and, reportedly, a peeping-tom. Golden asked his readers to put their victuals in ice boxes, to pull down their shades and he'd see what he could do to get police protection for the community.

The Vetville council made the next move. They petitioned the sheriff of St. Joseph County. Then the South Bend *Tribune* echoed the cause in a news item headlined "VETVILLE ASKS TRAFFIC SAFETY." Within two weeks, the community had a 20 m.p.h. speed limit, two stop-signs at the Bulla Road intersection, and two students deputized as sheriffs.

In domestic problems the *Gazette's* crusading spirit has been equally successful. It plugged for a food cooperative and got it. Two editors, Golden and Hupf, went to work on the baby-sitter problem and licked it. A system was established whereby Notre Dame students living on campus pooled their free evenings. The students were paid by the hour. Editor Golden changed this. He got the students gratis.

There have been a few notable thorns in the *Gazette's* editorial bed of roses. The sharpest concerned the action taken by Congress to raise the subsistence scales of veterans going to school under Public Law 346. Congress anted the married vet's allowances from $90 to $105 per month, but kept a ceiling of $200 on their earning capacity.

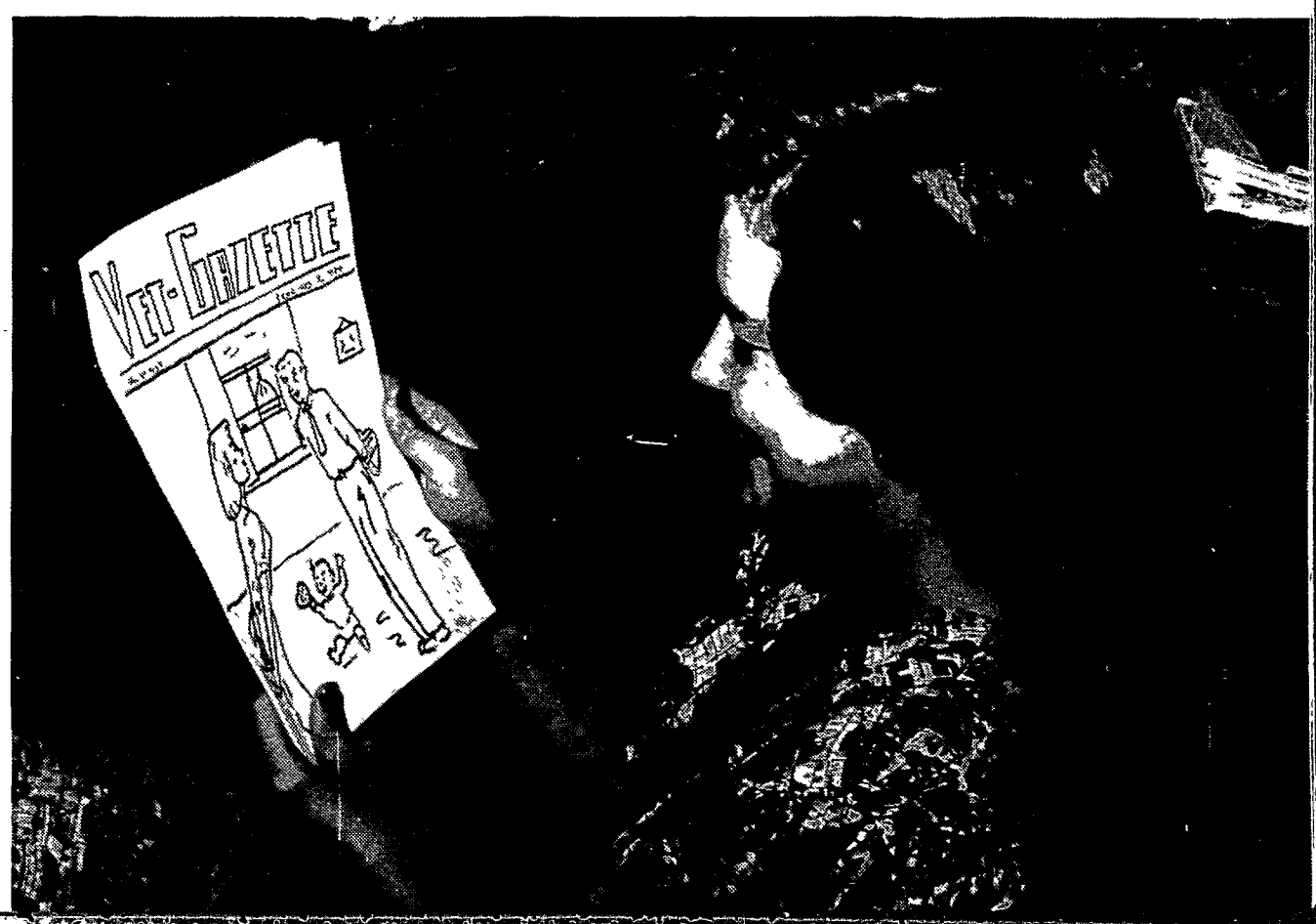
Editor Golden voiced his disapproval in the April 2, 1948, issue of the *Gazette.* Said he: "To aid the veteran of World War II . . . Our Congress raised the subsistence allowance. Good. Few will argue that this is not beneficial. One small item, however, they overlooked; the ceiling on the greatly benefitted veteran's earning capacity. The subsistence was raised and the ceiling maintained. The obvious result is a cut in the married veteran's earning capacity. This situation is outrageous. The existence of any ceiling at all is intolerable."

After two weeks of loud lamentation — minus any action from his berated congressman — Golden threw in the towel. The *Gazette,* he reasoned, was not being circulated on Capitol Hill.

Jim Coyle is still waving the journalistic saber but with a little less flourish.

"The Golden Days of crusading are over," comments Editor Coyle. "Vetville is running pretty smoothly now and the citizens are more content. But should something come up that we Vetvillers don't like, I'll add a little sulphuric acid to the ink and start firing with a page one editorial."

All Vetvillers read the GAZETTE including Mrs. Shirley Martin



Notre Dame Scientist Registers Victory In Typhoid Fever Research

By RAYMOND J. DONOVAN

The author has written publicity for five years at Notre Dame and is now Director of the Public Information Department. He graduated from Notre Dame in 1942, and formerly was sports editor of the Logansport (Ind.) Pharos-Tribune. NOTRE DAME *has published several articles written by Mr. Donovan.*

"WE have bigger things cooking . . ." This statement from Dr. John A. Vaichulis, a graduate of the University of Notre Dame in 1929, who together with an associate has registered the biggest victory over typhoid fever carriers in the history of medicine.

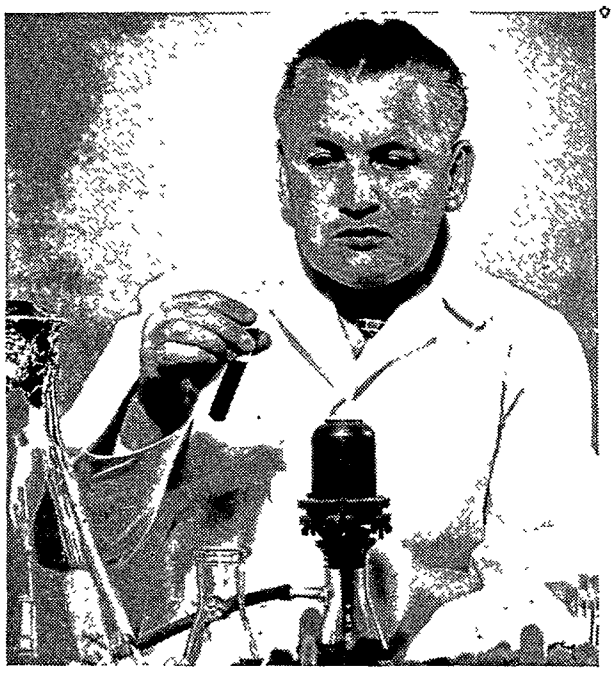
Dr. Vaichulis speaks only casually of his triumph over the dangerous typhoid carrier, which renowned scientists have been striving to conquer for many years. The Notre Dame trained scientist would rather look to the future, to his work in tubercular cures and to his research in the treatment of schizophrenia.

But today, the world is hailing Dr. Vaichulis for his most recent achievement. His victory over "Typhoid Mary," as the innocent carrier of typhoid is called, has cured all but six of 146 such patients who were in Manteno State Hospital in Illinois in 1946. And Dr. Vaichulis believes that the remaining six soon will be evacuated.

Until young Dr. Vaichulis began his research, even the so-called "super drugs" were unable to help the thousand upon thousand of typhoid carriers. This fact provides even a closer and more comprehensive view of the miracle attained by this brilliant scientist.

Dr. Vaichulis, who received a Bachelor of Science degree from Notre Dame in 1929, teamed with University of Illinois physiologist and Vice-President, Andrew C. Ivy, in conducting experiments which led to two new treatments for the disinfection of typhoid carriers.

The first typhoid treatment devised by the Notre Dame alumnus consists



Dr. Vaichulis

of "antagonistic bacilli," which is taken through the mouth in ginger ale or some other carbonated beverage. An "antibiotic" is produced by the bacilli in the patient's system and this "antibiotic" kills the typhoid germs in a period of from two weeks to a month.

The other Vaichulis treatment is composed of penicillin, three sulfa drugs (thiazole, diazine and merazine), plus alcohol and a dye called iodophthalein. Injected into the patient's muscles and veins, this treatment works faster, but in the Manteno State Hospital test it made 50 percent of the patients violently ill.

Before Dr. Vaichulis' amazing discovery, the only treatment for typhoid fever carriers was to remove the gall bladder, where typhoid germs often breed. This, however, is an expensive and disagreeable operation that was useless if other organs such as the intestines also had become breeding places.

To aid Dr. Vaichulis in his recently completed work, a supply of $75,000 drugs was given by Commercial Solvents Corporation, Sharpe & Dohme, Inc., and the Baxter Laboratories.

But, as Dr. Vaichulis says, let's look to the future. The distinguished scientist at one time worked with Dr. L. J. Meduna, the discoverer of the original shock therapy in schizophrenia, at Manteno State Hospital. When their super-centrifuge "conked out," it turned out to be a break for the Notre Dame scientist, who then teamed up with Dr. Ivy.

Now the pair can cure all of the enteric diseases with the exception of cholera. And if it hadn't been for the critical situation today in China, it is likely that Dr. Vaichulis and Dr. Ivy would be guests in China of Chiang Kai-Shek. For it was the latter who invited them to come to China for research on the cure of cholera. The trip to China, however, will have to wait for better days.

After Dr. Vaichulis and Dr. Ivy complete the present tuberculosis research which they are conducting, they hope to be back on the trail of a cure for schizophrenia. According to Dr. Vaichulis, they have some leads which might "clear up over half of the hospital beds in the country." Dr. Vaichulis points out that he is primarily a biochemist, but plans this brief sojourn into bacteriology to work on schizophrenia.

Dr. Vaichulis was trained in his early scientific background at Notre Dame in the old Chemistry Building. It is for the training of such scientists as Dr. Vaichulis that the Notre Dame Foundation currently is seeking $1,750 000 from alumni and non-alumni friends to erect a new Science Center. Construction will begin on the new building as soon as funds are available. He was a monogram man on the track team during his undergraduate days at Notre Dame, which was during the final years of Knute Rockne's life.

After leaving Notre Dame he took graduate work at the University of

Illinois. And it was while obtaining his Master's Degree at Illinois that he registered another "first" by describing the sulfa drugs two years before Domagk announced his discovery and received the Nobel Prize for his efforts. Dr. Vaichulis' thesis describing the sulfa drugs is in the Quine Library of Illinois.

Dr. Vaichulis was awarded his Doctorate degree in Pharmacology from the University of Chicago under Dr. E. M. K. Geiling, who is a Mendel Medal recipient from Villanova. His teaching experience includes the Universities of South Dakota, Illinois, Chicago and Loyola of Chicago.

Dr. John Vaichulis is the fourth Notre Dame scientist in the past twelve months to make a major discovery. Dr. Charles C. Price, Head of the Department of Chemistry at Notre Dame, last winter isolated four compounds capable of neutralizing the Rh factor in human blood. Another Notre Dame chemist, Dr. Charles A. Hufnagel, gained national prominence for development of a technique to repair the aorta blood vessel with a plastic tube and for the establishment of artery banks similar to blood banks. A third Notre Dame alumnus, Dr. Robert A. Nelson, recently was successful in developing a new test for syphilis.

But Dr. Vaichulis is most contented when he gets around to telling about "clearing the hospital beds of the country." He readily admits that he has had his share of bad breaks, along with the good ones, but points to his student training at Notre Dame as the factor which has helped him most to overcome these odds.

Then he gets back again to the original point of approach. He readily answers any questions asked him about his typhoid research, but hastens to add, "Now let's look into the future . . ."

MEDICAL CHEMISTRY DIVISION SLATED FOR CAMPUS MEETING

The University of Notre Dame has been chosen as the site of the 1950 National Symposium of the Medicinal Chemistry Division of the American Chemical Society.

The symposium, which will be held from June 15 to 17 next year, will feature discussions by experts of the new developments in drug chemistry. More than 500 pharmacologists and chemists are expected to attend.

IRENE DUNNE RECEIVES 1949 LAETARE MEDAL

The University of Notre Dame formally conferred its 1949 Laetare Medal, awarded annually to the outstanding American Catholic layman, on movie actress Irene Dunne at ceremonies held on the Notre Dame campus. Miss Dunne, who in private life is Mrs. Francis D. Griffin, was accompanied to Notre Dame by her husband, Dr. Griffin; Mary Frances, their 12-year-old daughter; and a host of movie executives.

In accepting the Laetare Medal, the oldest American Catholic medal, Miss Dunne told the audience in the Notre Dame Drill Hall that "when a university of men honors a woman, I see in it an echo of its original consecration, when high upon its golden dome the university placed the Lady Who is Notre Dame."

"I might be tempted to regard this Laetare Medal as a personal tribute were it not for the fact that I, like you, have been born of Notre Dame," Miss Dunne declared. "Everyone is born of woman, not only physically but spiritually In that consciousness, I know that the Laetare Medal is not for my honor but is rather first a tribute to womanhood and secondly to my profession."

NOTRE DAME FIRST IN STUDENT RELIEF CAMPAIGN

The University of Notre Dame, with a student contribution of $26,181 led Catholic Colleges in the United States for the second consecutive year in the Student Relief Campaign.

The nation-wide campaign, sponsored by the National Federation of Catholic College Students, raised a total of $386,901 for physical, spiritual, and intellectual relief of students in war-devastated countries. Relief materials purchased with the proceeds are being distributed to needy students in eleven foreign countries.

Chairman of the 1948-49 relief campaign at Notre Dame was Jack Dempsey, of Philadelphia, Pa. The amount raised at Notre Dame came through the sponsorship of football victory dances, door-to-door canvasses, clothing drives and an all-campus carnival.

Louis J. Burns, of Washington, D. C., a June graduate at Notre Dame, served as national campaign chairman. Joseph A. Conerty, Jr., senior in the Notre Dame College of Law from Crystal Lake, Ill., was national publicity director.

ATOMIC ENERGY COMMISSION PROVIDES NEW GENERATOR

The large Radiation Chemistry Project at the University of Notre Dame will be jointly sponsored by Notre Dame and the Atomic Energy Commission, according to a contract announced recently by the Rev. John J. Cavanaugh, C.S.C., President of Notre Dame.

This is one of the several significant scientific programs for which the University of Notre Dame Foundation is seeking $1,750,000 for the proposed Science Building, initial project in a long-range expansion program.

Under the terms of an agreement reached between Notre Dame and the Atomic Energy Commission, the AEC will provide a 2,000,000-volt Van de Graff electrostatic generator for use by the Notre Dame Radiation Chemistry Project. The new "atom smasher," which will produce both high velocity electrons and X-rays, will be housed in a concrete structure to be built by the University. Construction of the structure to house the "atom smasher," which is separate from the Science Building proper, will be started this Fall and the generator is expected to be ready for operation next Spring.

The new electrostatic generator, when installed at Notre Dame, will be the second such generator being used at Notre Dame to conduct atomic research. A 4,000,000-volt generator is used for experimentation in the Department of Physics at the University. (See "Atom Smashing" on page 3, this issue).

Purpose of the Radiation Chemistry Project at Notre Dame, which is concerned only with fundamental scientific research, is to study the general effects of high energy radiation which are produced in the processes of radioactive decay in all types of substances. It is the aim of the Notre Dame project to determine what harm and what good this radiation does, and why it does harm and good. Such scientific material is fundamental to the development of atomic power, and has applications in many other fields.

Director of the Radiation Chemistry Project at Notre Dame is Dr. Milton Burton who during World War II was in charge of the Radiation Chemistry Research of the Manhattan District Project. Dr. Burton was a scientific observer at the Bikini tests following the war.

Other members of the faculty who are on the Radiation Chemistry Project staff include: Dr. William H. Hamill, Dr. Russell R. Williams, Dr. John L. Magee and Dr. Andrew J. Boyle.

NOTRE DAME AIDS GRADUATES IN OBTAINING EMPLOYMENT

Job counseling for undergraduates and for graduates who may be displaced by an economic recession is the number one task to be performed in the immediate future by the University of Notre Dame and by the Notre Dame Alumni Association, in the opinion of the Board of Directors of the Alumni Association which met recently on the campus.

Discussing many projects in the broad program of the Notre Dame alumni, all directors agreed that the basic service to the individual graduate is to help him obtain employment. This help begins with the intensification of Notre Dame's present program of undergraduate vocational counseling.

If the board program succeeds, the University efforts will be supplemented by a national network of practical help for Notre Dame men through the 112 Notre Dame Clubs in every key city in the United States, and by a national committee of business, professional and industrial leaders among the University's alumni.

NATIONAL CANCER INSTITUTE AWARDS GRANT TO ND CHEMIST

Synthetic production of a compound which will successfully kill cancer cells without killing the normal cells in a human body is the aim of research currently being conducted by a University of Notre Dame chemist.

The scientist, Dr. Kenneth N. Campbell, Professor of Organic Chemistry at Notre Dame, recently was awarded a $7,200 grant by the National Cancer Institute to continue his research in cancer. This is one of the several significant scientific programs for which the University of Notre Dame Foundation is seeking $1,750,000 for the new Science Center.

A certain amount of success has been accomplished to date in the experiments which have produced compounds of decreasing toxic power. The twenty-eight compounds produced thus far in the Notre Dame laboratories under the supervision of Dr. Campbell have been sent either to the National Cancer Institute laboratories in Washington, D. C., or the Sloan-Kettring laboratories in New York City. The drugs are then tried on cancerous mice.

EISENHOWER STRESSES NEED FOR INDEPENDENT THINKING

Great universities have lived longer than most governments. Only when they become identified with some narrowly defined concept, or have been dominated by some power or pressure group, have they withered or lost their true usefulness to the world. The moment that a university loses its independence, it is of course no longer a university.

We expect to teach oncoming generations of students that intellectual, spiritual and political freedom has been the principal ingredient of American greatness. We shall make sure that they understand our country and its basic moral and physical aspects.

As an independent, gift-supported University, we must move boldly, admit mistakes, and speak frankly about what we are doing. I think the public would quickly grow tired of institutional administrators who might endeavor to cloak themselves in an impenetrable mantle of nobility, rather than to get on with their jobs.—President Dwight D. Eisenhower, Columbia University, in a letter to Alumni.

Many of the recipients of NOTRE DAME have asked whether they may not pay a subscription fee. We are grateful for this thoughtful gesture but NOTRE DAME is not for sale. This magazine is sent to you as a friend by the University in response to the interest manifested in the University of Notre Dame and the important work being undertaken here.

Gifts already received from non-alumni friends, as well as alumni, have been instrumental in furthering the University's program for buildings, scholarships and research. Your own contribution may be a determining factor in providing aid for Notre Dame scientists to reduce fatalities from heart disease and cancer.

An invitation to you . . .

To be an active participant in financially assisting the training of young men to be moral, responsible leaders in <u>your</u> community and in all America.

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Gifts should be payable to the UNIVERSITY OF NOTRE DAME and mailed to the UNIVERSITY OF NOTRE DAME FOUNDATION, Notre Dame, Indiana.

Today and Tomorrow in Science

Organic Chemistry Lab

Despite crowded laboratories and classrooms experiments in science, are being and have been, investigated on the Notre Dame campus. Among the many projects are research studies in:

Rh FACTOR—Dr. Charles C. Price and his associates have isolated dangerous Rh antibodies in the blood, which may cause still-births and miscarriages in pregnancy, as well as jaundice and other blood diseases in infants.

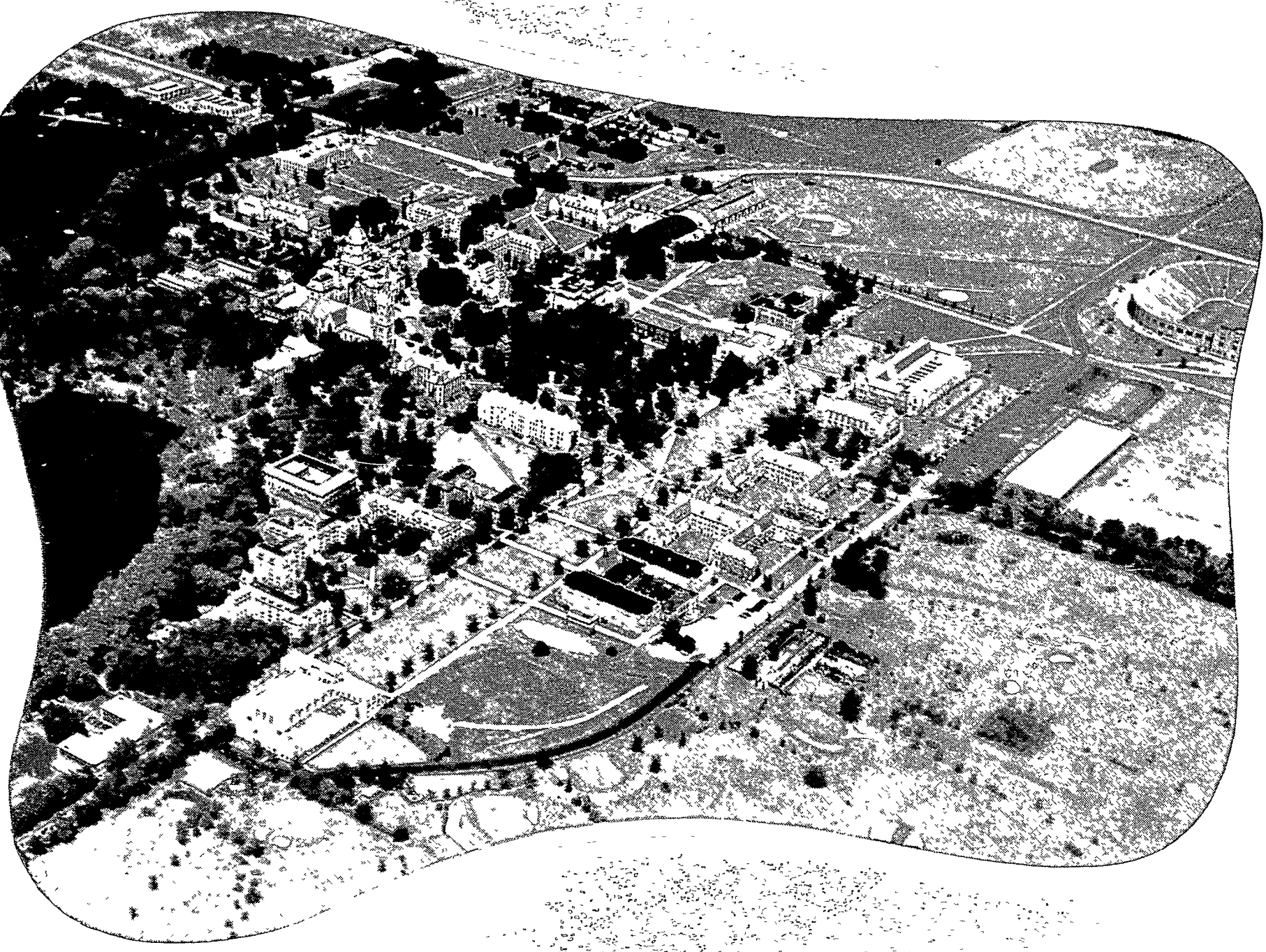
ANTI-MALARIAL DRUGS—Development, by Dr. Kenneth W. Campbell, of a substance which has proved superior to both quinine and atabrine in fighting malaria.

SYNTHETIC RUBBER—Components of neoprene, which became the first commercially successful synthetic rubber in Ameria, were discovered by Father Julius Nieuwland, C.S.C.

ATOMIC ENERGY—Of vital importance to national defense are experiments in Radiation Chemistry and Nuclear Physics—a continuation of research problems of World War II.

MATHEMATICS—Studies in advanced matematics that have potential effects on planning arctic navigation charts for the Army Air Forces.

The proposed new Science Center can be a reality with *your* help. Approximately one-half of the necessary $1,750,000 to erect the building has been given. This is the true test. Will Notre Dame's thousands of friends—those who have adopted Our Lady's University for their own Alma Mater—rally to the challenge? The financial assistance of *every* friend is urgently needed—now! Your gift—mailed today—will build the Notre Dame of tomorrow.



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