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# The Princeton Herald

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PRINCETON, N. J., FRIDAY, APRIL 13, 1945

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## AYDELOTTE REMAINS AS INSTITUTE HEAD

Einstein and Herzfeld Designated As Professors Emeritus—Lowe and Veblen Retire This Year

### TRIBUTE PAID TO FOUNDERS

Dr. Frank Aydelotte who normally would have retired as director of the Institute for Advanced Study this year has acceded to a request of the trustees to continue in office until 1947, the Institute announced yesterday. Dr. Aydelotte succeeded Dr. Abraham Flexner in 1939.

The Institute also made known the retirement from active service of Dr. Albert Einstein, internationally-known mathematician, and his designation as professor emeritus.

Dr. Einstein who was 66 on March 14th is, despite his retirement, carrying on his normal research program, working on "the theory of bivector fields and other fields the structural elements of which depend on two space-time points, as a possible means for the construction of a unified field theory of relativity."

The designation of professor emeritus has also been accorded to Dr. Ernest Herzfeld, archaeologist. Professors Oswald Veblen, mathematician, and Elias A. Lowe, palaeographer, will retire at the end of this year.

The Institute also issued its Bulletin No. 11, constituting the first report it has made on its activities since October 1941. The Bulletin pays tribute to its two founders, Louis Bamberger, Newark merchant, and his sister, Mrs. Felix Fuld, each of whom died in 1944. Mr. Bamberger and Mrs. Fuld founded the Institute in 1930 with a gift of \$5,000,000, increased this endowment with subsequent benefactions during their lifetime to \$8,000,000 and gave the building housing the Institute which bears the name of Fuld Hall. The Institute is the residuary legatee under the wills of Mr. Bamberger and Mrs. Fuld.

Mr. Bamberger, the Bulletin says, "was a great merchant, a loyal Jew, a public-spirited citizen of Newark and a patriotic American. While he

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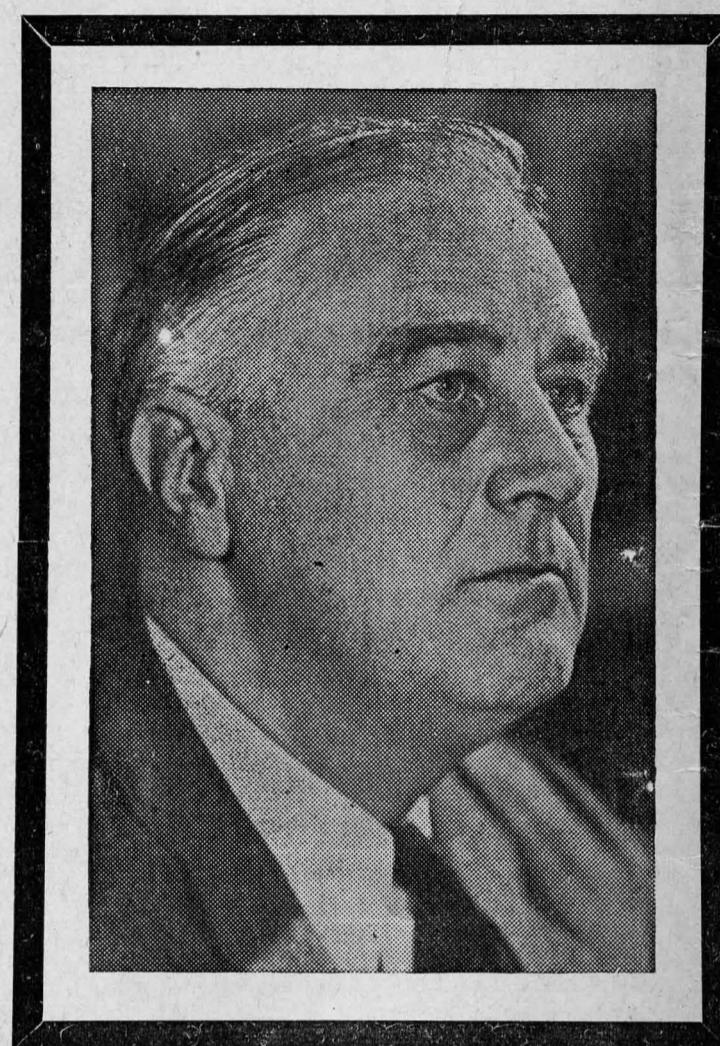
## COUNCIL PLANS REPAIR OF BANK STREET MAINS

Cessation of all traffic on Bank Street, except pedestrian, for five weeks starting the first of May would be necessary if proposed plans for repairing its water mains are carried through, it was disclosed at the meeting of the Borough Council on Tuesday evening.

It was agreed that before it is definitely decided to undertake the project any possibility of postponement for a few years should be investigated and that the owners of property on Bank Street should be notified of the undertaking. Their opinions on its necessity and the suitability of the time selected will be requested.

A recent order issued by the Board of Health requiring the tenants at 217 and 219 Witherspoon Street to vacate those premises because they are deemed unfit for human habitation had, said Mayor Charles R. Erdman, Jr., dramatized the housing shortage in Princeton.

After pointing out that the Welfare Department under Chairman William R. Lewis has been trying without success to find quarters for those displaced, Mayor Erdman added: "This clearly points to the great need for low-rental housing. The interruption caused by the war to the plans for the construction of additional housing by the Local Housing Authority is great



FRANKLIN DELANO ROOSEVELT

1882 — 1945

## MEMORIAL SERVICES IN CHAPEL TOMORROW AT 4; TRIBUTES ARE PAID TO AMERICA'S FALLEN LEADER

When the tragic news of the passing of President Roosevelt came over the radio late yesterday afternoon, flags were flown at half-staff and just before eight o'clock, the bell on Nassau Hall tolled for five minutes to mark the death of the man whom Senator Robert A. Taft called today "the greatest figure of our times."

A service in memory of President Roosevelt, which all residents of the community are invited to attend, will be held by Princeton University in the University Chapel tomorrow afternoon at 4 o'clock, the hour of the President's funeral in Washington.

Dr. Robert R. Wicks, dean of the University Chapel, and Lieutenant A. Merriman Cuninggim, Navy Chaplain on the Campus, will conduct the service. H. Alexander Smith, Senator from New Jersey, Walter E. Edge, Governor of the State, Dr. Charles R. Erd-

man, Jr., Mayor of the Borough of Princeton, and B. Franklin Bunn, Chairman of the Princeton Township Committee, have been invited to attend the service.

Invitations have also been extended to the congregations of all churches and to members of civic and fraternal organizations to join with the University in the service. No seats will be reserved except for members of the Princeton Naval Unit who will attend in a body.

The Second Presbyterian Church has announced that it will hold a memorial service on Sunday morning at 11 o'clock, at which time the members of the congregation will dedicate themselves to the ideals of peace.

A memorial service was held at Miss Fine's School this morning. Miss Shirley Davis, the Headmistress, addressed the assembly.

## Major Archer Paints Vivid Word Picture Of Prison Conditions in the Philippines

The delaying battle which the American and native troops fought in the Philippines from December 7, 1941 until the following Spring was

dead of either wounds or starvation," he said. "I should call that the perfect solution."

The cruelties and atrocities the Japs have perpetrated could not be exaggerated, he said. It is impossible to describe the enormity of their fiendishness for it took so many forms and was repeated so often that no single person could comprehend it. Forty men died each day in the prison camp where he was held until the Red Cross parcels came through, whereupon the toll fell to ten a month. When the Red Cross food was gone, the death rate immediately shot up.

If Russia declares war on Japan, her resources and the proximity of her bases would render Japan's life-line to sources of food and raw materials in China, Manchuria and Korea so precarious that in Major Ar-

cher told a representative of THE PRINCETON HERALD upon his return to his Princeton home this week. That action, said the Major, who was rescued from Bilibid prison only two months ago, prevented the Japanese from occupying Australia, thereby preserving the springboard and supply base for our successive operations.

He told of working on the prison farm and raising a fine crop of vegetables, only to be given one-sixteenth of a pound a day and to see quantities of vegetables lying and rotting in the fields. The prisoners were given

## Gov. Edge Proclaims 30 Days of Mourning

Governor Walter E. Edge, by proclamation, declared today a 30-day period of mourning for President Franklin D. Roosevelt and urged everyone in the State, "as a personal tribute," to form a unified public opinion for a permanent end to the grief and destruction of warfare.

From "Morven," Governor Edge issued the following statement:

"The tragic death of the President stuns the nation and almost defies comment. His leadership at this critical period cannot be transferred to any living American. The knowledge he possessed of the preparations for peace probably never will be fully known by his closest advisers.

"On behalf of the people of New Jersey I extend my sympathy and condolence to his family and the country for which he gave his life. His profound courage which has led us to the threshold of victory must stimulate us in this hour of mourning. It must become our own courage to carry on for a permanent peace so that this sacrifice of our men and resources will not have been in vain."

Former Governor Charles Edison, Secretary of the Navy in President Roosevelt's cabinet in 1939-40, said today in his home in West Orange:

"The passing of a great leader whose life and acts have profoundly affected the lives of all humanity is an almost overwhelming shock. The nation deeply mourns his being taken from us. But the American people

(Continued on page four)

## MEETING AT TRINITY IS PEACE DISCUSSION

### GOVERNOR EDGE PRESIDES

Senator Smith and Dr. Aydelotte Speak—Dean Root Reads President Dodds' Paper—Dr. Kinsolving In Tribute to Roosevelt

### THEME, "THE ROAD TO PEACE"

Paying tribute to America's fallen leader, Dr. Arthur Lee Kinsolving, Rector of Trinity Church, opened the meeting held there tonight, at which men prominent in the councils of the State and the nation, Princeton residents, discussed "The Road to Peace."

"Last evening's news deepens our consciousness of the people's responsibility," said Dr. Kinsolving. "With the nation's leader lying dead, the nation must carry on. Would not he who has given himself unstintingly in the struggle for peace be the first to approve our gathering tonight to explore further the road to peace? For it is for us who remain to realize the ideals of international cooperation toward which he lifted the hopes of mankind.

"In the other great crisis the hope of a league to enforce peace was given the world by a man whose vision and resolution had matured as a professor worshipping in a Princeton Church, as President of the University and then as Governor of this State. What is more fitting than that in a church in Princeton, carrying forward this sacred concern for peace, trusted Christian men in these same positions should guide our thought about present issues affecting the prospects of peace on earth?"

Introducing Governor Walter E. Edge, who presided as Chairman over the meeting, Dr. Kinsolving said:

"Mine is but a voice of acknowledgment in my own behalf, in yours, and in the name of the Parish that we are duly sensible of our privilege in having as our Chairman, His Excellency the Governor, who has come to us as a neighbor distinguished by service to the nation in her longest af-

(Continued on page four)

## C. H. ROGERS PROTESTS ISLAND BEACH CHANGE

Charles H. Rogers, Curator of the Museum of Zoology at Princeton University and State President of the New Jersey Audubon Society, has added his protest to that of botanists, nature lovers, members of Garden Clubs and Farm Associations who are opposing the conversion of Island Beach into a public recreation park as proposed early this year by the State Department of Conservation and Development.

A statement by Mr. Rogers follows:

"Much as many of us prefer forest, marsh and dune to factory, plowed field and beach cottage, we must be realistic and grant that the bulk of the wilderness in our thickly settled part of the country must yield to the needs of a great population. But we insist that there be a limit, that the wilderness be not completely and everywhere destroyed, but that reasonably large samples be preserved forever, for the pleasure, instruction and benefit of ourselves and of posterity, in which to enjoy and study the wilder forms of plant and animal life, and to show for all time what the country and its life were like before the white men came. And such samples must be taken while still primitive, for you cannot preserve what has once been destroyed, and its truly primitive condition and life cannot be

"His death in the service of his country has stunned the world but it will give each one of us renewed determination to prosecute the war to a speedy and victorious conclusion."

Chairman Bunn issued the following statement:

"The flag at Princeton Township Hall was lowered to half-staff on Friday morning in formal recognition by the residents of the Township of the death of President Roosevelt. But

(Continued on page four)

## Lieut. Cameron Killed In Action in Germany

Dr. and Mrs. A. Guyot Cameron, of 24 Mercer Street, were notified by the War Department Friday, of the death of their son, First Lieutenant Gerard Guyot Cameron, of the Army Coast Artillery Corps, who was killed in action in Germany on March 24th.

Lieutenant Cameron who was born in Princeton, was thirty-six years of age. He attended Princeton High School and was graduated from Yale University with the Class of 1931. He enlisted in the Army in May, 1942.

Besides his father and mother, Lieutenant Cameron is survived by three brothers, all of whom are in service; Lieutenant Colonel A. Guyot Cameron, Jr., who is stationed in San

## Employment In State For Veterans After War

New Jersey's veterans can anticipate satisfactory postwar employment conditions in this State partly because of its great diversification in industries, Dr. Charles R. Erdman, Jr., Commissioner of the State Department of Economic Development stated this week.

"More than 1,000 industrial concerns have been located in New Jersey during the last 10 years, and their classifications range from foundries and fur dressing establishments to cosmetic manufacturers."

This information was gathered by the New Jersey Council, a unit of the Department of Economic Development. Among the responsibilities of the Council are those of encouraging industrial development, promoting the wealth producing resources of the state, expanding the markets for New Jersey agricultural products and helping more people to realize that New Jersey is ideal for residence, work and recreation.

Of the more than 1,000 concerns located here since 1935, 672 were either entirely new or moved into New Jersey from another state. The remaining 328 represented expansions of existing plants or transfers from any section of the State to another.

Classification of the 672 new industries was solely on the basis of products manufactured without regard for volume of business or number of employees. The clothing industry accounts for the greatest number of new establishments in New Jersey, having 9.1 per cent of the total.

Textile manufacturers are second with 7.9 per cent. Food products account for 7 per cent; electric equipment, 6.4 per cent; chemical 6.1 per cent; metal working 5.5 per cent and paper containers and products, 4.5 per cent. Other new plants, classified according to their frequency in the State area: woodworking, machine and tool shops, aircraft, building materials, pharmaceuticals and cosmetics, machinery, plastics, automotive equipment, paints and varnishes, steel and fabricated products, non-ferrous metals, rubber products, smelting and refining, fur dressing and dyeing, foundries, leather and leather prod-

ucts and cold storage and quick freezing.

Despite this wide listing of types of business 17.7 per cent of the new industries still fall in the miscellaneous category covering a wide field of products from buttons to battleships and including industrial laboratories of the most modern construction.

Dr. Erdman pointed out that the great diversification of business in the State gives returning veterans a wide choice of occupations and helps to insure them against seasonal unemployment.

The New Jersey Council's classification of new industries also revealed that "specialty areas" in the State are disappearing. "Once Paterson was known exclusively for its silk manufacturing and Trenton for pottery," Dr. Erdman recalled. "Today there is a great variety of articles manufactured in these former specialty areas."

(Continued on page seven)

## DR. AYDELOTTE CONTINUES AS HEAD OF INSTITUTE

(Continued from page one)

had only a limited amount of schooling, he possessed an instinct for excellence." He and Mrs. Fuld "sought no recognition for themselves" and desired only to make the Institute "as useful as possible to higher learning in America."

The Bulletin reports that while heavy demands have been made by the war on the Institute's faculty and members, the burden is now decreasing. Professor Winfield W. Rieffler has returned to the staff after two years as Minister to England in charge of economic warfare. Professor Edward M. Earle who has been consultant to the War Department and Professors Veblen, Marston Morse and John von Neumann, who have been engaged in scientific research, are giving an increasing amount of their time to the Institute.

Included in the Bulletin is a report on the activities of the Economic, Financial and Transit Department of the League of Nations which has been housed in Fuld Hall of the Institute since it left Geneva in 1940. The report is devoted primarily to the publications of this branch of the League.

## MAJOR ARCHER TELLS OF EXPERIENCES AS PRISONER

(Continued from page one)

hopelessness of their situation which descended upon some men proved as fatal. Some were so crushed by the long years of captivity that they died simply because they had no will to live. Survival under the starvation diet and blows and tortures of their guards was so difficult that Major Archer thought only a few thousands of all the American troops have lived through their imprisonment. He attributed the survival of many soldiers to the fact that secret radios were built and ever since they first picked up news of the American landings on Guadalcanal, the hope which then flickered in their hearts never died and faith in ultimate rescue kept them alive.

Every woman in the United States who had a husband, son or brother in the Philippines owes a debt to the Philippine women so great it cannot be repaid. The prisoners managed to exist only by paying their Japanese guards to procure additional food for them, miserable as it was. When their own store of money ran out, the Philippine women formed an extensive underground which gathered together money, in all amounts, which they gave, unsolicited, to prisoners whom they did not even know personally, to buy food from their guards at exorbitant prices. The American planes came over, took pictures, and the following day returned to bomb the Jap emplacement with such accuracy that the guns were blown out of commission but the American prisoners were untouched.

Major Archer was soon after sent to Bilibid prison. The American troops arrived on February 4th, but deliverance was delayed for five days until the rescuers themselves were reinforced. He then proceeded by plane to Leyte, by boat to New Guinea, and thence to San Francisco where he arrived March 16th.

He attributed his own survival to the fact that his previous years of service had inured him to hardships. "Men from 24 to 30 suffered the most," he said. "They seemed to need more food and they couldn't stand the brutalities of their guards." He told of one guard who gave a prisoner a cigarette, exchanged a word or two, and suddenly beat him viciously over the head with a club.

Major Archer's trim, erect figure,

we were caught sleeping. The air force was destroyed the next day. On December 10th Cavite, the naval base, was destroyed but luckily the ships had already pulled out and so the Jap victory at Cavite was a hollow one. If instead they had bombed our supply area, which they couldn't find, they might have won much sooner. As it was, we immediately went on half-rations. Malaria and dysentery were rampant and for several days before the surrender many men had no food at all."

Major Archer, having been wounded in the lung on April 1st, was hospitalized after the surrender and so escaped the frightful death march. He was imprisoned in Cabanatuan from May 29, 1941, until November, 1944, when he was transferred to a prison camp at Fort McKinley. There the Japanese threw a heavy cordon of anti-aircraft guns around the prisoners, hoping that this manoeuvre would compel the American planes to desist from bombing the guns. The American planes came over, took pictures, and the following day returned to bomb the Jap emplacement with such accuracy that the guns were blown out of commission but the American prisoners were untouched.

impeccable military bearing and penchant for adventure were immortalized by Richard Harding Davis in his novel about the Honduras revolution, "Captain Macklin," which appeared in 1902. His own book of reminiscences, "Mr. Archer, U.S.A.," as told to Rutherford Platt, was published in 1924. He has served in the United States Army for 49 years, taking part in the Cuban, Mexican and Spanish campaigns, the Boxer Rebellion incident in China, the first World War, and both Philippine campaigns. He was, for a number of years, a member of the Princeton R.O.T.C. staff. He wears the Purple Heart and a Presidential Citation with two clusters.

"Organized war in Europe," he predicted with a cool disregard for the perils of printed prophecy, "will be over April 20th. A few days ago I said the 15th but now I'll bet on the 20th." That date will also probably find him at Camp Dix where he will report soon for medical treatment. Major Archer will retire following a four-months' leave. Even today, he said, Mrs. Archer, their two sons, Royal Macklin Archer, 16, and Herman N. Archer, Jr., 13, and he are looking forward to returning once again to the Philippines.

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HARRIET SAMUELS  
*Editor*  
DONALD C. STUART, JR.  
*Editorial Editor*



Friday, April 13, 1945

**CROSSING THE BAR**

Sunset and evening star,  
And one clear call for me!  
And may there be no moaning of the  
bar  
When I put out to sea.

But such a tide as moving seems  
asleep,  
Too full for sound and foam,  
When that which drew from out the  
boundless deep  
Turns again home.

Twilight and evening bell,  
And after that the dark!  
And may there be no sadness of  
farewell  
When I embark.

For though from out our bourne of  
time and place  
The flood may bear me far,  
I hope to see my Pilot face to face  
When I have crossed the bar.

**SUNSET AND DAWN**

Life abounded on Thursday afternoon as Princetonians wended their way from work to home. Grass was lush and lilacs and tulips were bursting. Everything was good—and to top it off the headlines on the newsstand predicted an early entry of Berlin. All was right as it could be with the weary, war-torn world on April 12, 1945. Arrived at home Princetonians flicked on their radios for the pre-supper news broadcast. . . .

The feeling they had—the feeling all Americans had — was a feeling of hollowness. It was a feeling which only a people can have who have enthusiastically and voluntarily entrusted their present and their future to one man. It was a feeling more than of

**WILL HOLD SERVICES  
IN CHAPEL TOMORROW**

(Continued from page one)

the real tribute which they paid to him was in the hearts and minds of all of them. For they realized that the leader to whom the American people had looked to guide them through the dark hours would not be present to point the way to the brighter future. But they also realized—and perhaps this is the tribute he would have appreciated most—that it was not a time for hysteria but for steadfastness, not a time for quitting, but for redoubled effort."

Dr. John A. Mackay, President of Princeton Theological Seminary, paid the following tribute:

"President Roosevelt has passed away at the culminating moment in the struggle with Germany and at a most crucial hour in the making of plans for future world order. The news of his passing has sent a tremor of consternation throughout our country and across the world.

"Diverse sentiments intermingle within one at the news. One cannot but feel a certain dismay at the passing of the ruler who played such a unique, and often solitary role, in the councils of war and peace. One is stirred to admiration at the memory of many things in the life of the distinguished figure who has gone. There was his exuberant mental and moral health amid chronic physical weakness; his life-long interest in common people; the clarity with which he saw the issues at stake in the present world struggle; the resolute part he pursued in the conduct of the war; his devotion to a political ideal whereby his country would assume full responsibility in the establishment and maintenance of world peace.

"Now that the President is gone, one feels afresh the majesty and relevancy of a great passage in the prophet Isaiah. When Uzziah, a king of Israel whom the people regarded as an indispensable man, had passed away, Isaiah saw 'the Lord of hosts, high and lifted up.' Roosevelt's passing is a moment for renewed faith in God on the part of our nation and for fresh dedication to the task of doing His righteous will in history."

Dr. Frank Aydelotte, Director of the Institute for Advanced Study, paid the following tribute:

"In his long term of office, Franklin D. Roosevelt accomplished the miracle of leading the American people away from the bankrupt isolationist policies of the 1930's to a position of power and responsibility in world affairs. This great change is due to his leadership, and it serves the deepest interests of the people of the United States. Roosevelt saw, more clearly

personally and for Princeton University officially I extend to you and your children our deepest sympathy in the death of President Roosevelt. His passing stuns the free peoples of the world but his indomitable spirit inspires them to carry on his efforts to free the world of war and the fear of war. May you and your children find comfort in the great contributions the President has made to this cause for which he has now laid down his life."

The telegram to President Truman was worded:

"To the President of the United States of America Princeton University pledges its unstinting support in this decisive hour in the history of our country and of free peoples everywhere. No call that you may make upon us toward winning complete victory as quickly as possible and toward laying the foundations for a world order in which peace and justice will prevail will go unheeded."

**Discuss 'Road to Peace'  
At Meeting at Trinity**

(Continued from page one)

fairs. We welcome the Bishop of this Diocese, my fellow clergy, our friends and neighbors."

Governor Edge said that, as indicated by Dr. Kinsolving, ordinarily the forum would have been adjourned out of respect to the memory of the President. "However," he said, "I am sure President Roosevelt would endorse most emphatically this movement to back up in every possible manner his prayers for peace—a peace that can be maintained. Lasting peace should be the objective of every American as the monument to his memory."

Peace was proclaimed from Princeton, from Nassau Hall where the Continental Congress was sitting when formal notification was received of the treaty of peace which ended the War for Independence, Governor Edge reminded the audience. Princeton, with its contribution to tolerance and education over a period of a century and a half, is a very proper setting for a movement which all of us fervently hope and pray will end future wars, he said.

U. S. Senator H. Alexander Smith whose special subject was "Milestones on the Road to Peace" reviewed the steps that have been taken along the road that "leads to freedom and security for all mankind." We must not expect perfection immediately, he said, warning against the danger of becoming too easily discouraged. "Our objective," he declared, "must be progress—more milestones on the road."

Dr. Harold W. Dodds, President of Princeton University was unable to attend the meeting because of illness.

among leading nations and also at apparently ambitious plans being suggested for political and economic supremacy.

"No doubt all those associated with the Allies' cause have great sympathy for the smaller nations, so ruthlessly plundered and disintegrated in the early days of the war," said the Governor. "However, the San Francisco meeting is not a Peace Conference. War is still being waged on every front. Accordingly, these almost helpless States must depend upon their benefactors for a fair adjustment of their great difficulties. For the present, at least, it would seem to be in order that they indicate a spirit of confidence and tolerance, and not make the terrific task of the larger nations, which have borne the brunt of the war, so involved that a successful and lasting peace may be jeopardized again."

"Let us not permit history to repeat that we have waged a successful war against those who would destroy democracy, but that we are so concerned with sectional disputes and power politics that peace, the sole objective of our appalling sacrifices, is made more difficult of accomplishment."

President Dodds, in his prepared address read by Dean Root, pointed out the dangers that beset the Road to Peace. "There is grave danger that we shall lose the peace through the mistakes of those who most desire to win it," he declared. "One of the most serious threats to the evolution of a new basis of instructional collaboration is the sincere but uncompromising perfectionist who is playing directly into the hands of the isolationist. Indeed the isolationist is picking up the perfectionist's arguments and repeating on every favorable occasion the charge of the perfectionist that our allies are playing dirty power politics and that America must keep away from the whole sorry mess. The isolationist would not attempt anything; the perfectionist demands too much. If the nation accepts either viewpoint we shall fail. The effect on public opinion of both is the same, that is, a defeatist attitude towards the possible because the impossible cannot be achieved."

Asserting that Americans have great faith in the power of legislatures and constitutional conventions to change things, the Princeton President said that this faith imputed to other nations blinds us to the historic obstacles to international federation and makes us intolerant of their unwillingness to entrust their security to an international government. "In our haste we forget that social institutions like government cannot be created overnight," he continued, "for they all root in the past, in habit, con-

stitution is no analogy at all and that it is, therefore, false and misleading.

"Let us fix our eyes on the possible; let us refuse to be divided or diverted by intolerant insistence on the impossible."

Continuing in a more specific vein, Dr. Dodds said: "Let us be realistic about force in international affairs. Let us not exaggerate unreal—(Continued on Page Five)

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And may there be no sadness of  
farewell  
When I embark.

For though from out our bourne of  
time and place  
The flood may bear me far,  
I hope to see my Pilot face to face  
When I have crossed the bar.

#### SUNSET AND DAWN

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The feeling they had—the feeling all Americans had — was a feeling of hollowness. It was a feeling which only a people can have who have enthusiastically and voluntarily entrusted their present and their future to one man. It was a feeling more than of loss. It was a feeling of being lost.

It was a feeling of helplessness. The arm upon which they had leaned for so long had been removed. The voice which had brought them comfort and inspiration was stilled. The guide which had pointed the sure path from the abyss of defeat to the shining peak of victory was no more. No longer theirs were the deft fingers which were to mold for them, from the ashes of the old, the bright new world for which they yearned.

Nor was that feeling of hollowness theirs alone. Throughout the world men were stunned and bewildered by the realization that the figure which symbolized for them liberation and justice and peace was no more.

The sun set on Thursday night. The dawn came on Friday morning. Princetonians and Americans squared their shoulders as they went to work. The hollow feeling was gone. Welling up into that hollowness—bursting as was the life of the spring about them—was that self-reliant spirit of America which knows no defeat, which surmounts all tragedy. And welling with it was the determination to see through to glorious achievement the things for which he had toiled and died.

F.S.O.

#### GOVERNOR EDGE PROCLAIMS 30-DAY MOURNING PERIOD

(Continued from page one)  
must and will meet the challenge of these critical hours soberly and with wisdom.

"I think if we could hear Franklin Delano Roosevelt now, he would be saying, 'steady, everybody—steady! There is a job to finish.'

weakness; his life-long interest in common people; the clarity with which he pursued in the conduct of the war; his devotion to a political ideal whereby his country would assume full responsibility in the establishment and maintenance of world peace.

"Now that the President is gone, one feels afresh the majesty and relevancy of a great passage in the prophet Isaiah. When Uzziah, a king of Israel whom the people regarded as an indispensable man, had passed away, Isaiah saw 'the Lord of hosts, high and lifted up.' Roosevelt's passing is a moment for renewed faith in God on the part of our nation and for fresh dedication to the task of doing His righteous will in history."

Dr. Frank Aydelotte, Director of the Institute for Advanced Study, paid the following tribute:

"In his long term of office, Franklin D. Roosevelt accomplished the miracle of leading the American people away from the bankrupt isolationist policies of the 1930's to a position of power and responsibility in world affairs. This great change is due to his leadership, and it serves the deepest interests of the people of the United States. Roosevelt saw, more clearly than most of his fellow citizens, the approaching danger of war. He saw also that the triumph of the dictatorships would be a serious threat to American liberties. With patience and sagacity he unravelled one by one the restrictions with which we had bound ourselves, so that we were able, even before Pearl Harbor, to give effective aid to the allies who were fighting our battle. He led our reluctant people to make preparation against the danger of our own involvement in the war, so that when the attack came, we were at least partially ready to meet it.

"Roosevelt's domestic policies have been the cause of sharp disagreement among our people. Few would criticize his conduct of foreign affairs. It is upon events taking place outside our country during the last twelve years that the deepest interests of the American people and of all democracies have depended. The greatest interest of democracy is peace and international security. It is tragic that Franklin Roosevelt could not have lived to finish his work, but we should be grateful that during the last fateful decade we have had the leadership of a man who saw so clearly where our true interests lay. He has laid the foundation for American participation in a better world order, and it is upon this foundation that we must build."

Immediately upon hearing the world-saddening news, President Harold W. Dodds sent a message of sympathy to Mrs. Roosevelt and a pledge of support to President Harry S. Truman on behalf of Princeton University.

To Mrs. Roosevelt he said:  
"For myself and for Mrs. Dodds

endorse most emphatically this movement to back up in every possible way his prayers for peace—a peace that can be maintained. Lasting peace should be the objective of every American as the monument to his memory."

Peace was proclaimed from Princeton, from Nassau Hall where the Continental Congress was sitting when formal notification was received of the treaty of peace which ended the War for Independence, Governor Edge reminded the audience. Princeton, with its contribution to tolerance and education over a period of a century and a half, is a very proper setting for a movement which all of us fervently hope and pray will end future wars, he said.

U. S. Senator H. Alexander Smith whose special subject was "Milestones on the Road to Peace" reviewed the steps that have been taken along the road that "leads to freedom and security for all mankind." We must not expect perfection immediately, he said, warning against the danger of becoming too easily discouraged. "Our objective," he declared, "must be progress—more milestones on the road."

Dr. Harold W. Dodds, President of Princeton University was unable to attend the meeting because of illness. The paper he had prepared was read by Dean Robert K. Root.

In pointing out the dangers on the road to peace, Dr. Dodds expressed the fear that the peace may be lost through the mistakes of those who most desire to win it—that the sincere but uncompromising perfectionist, in demanding too much is playing directly into the hands of the isolationist.

"Let us understand," he pleaded, that the attainment of the reign of law among nations will be a long process and that we cannot depend upon any statesmen performing a miracle to achieve it in a world of starved, broken and cynical people."

Dr. Frank Aydelotte, Director of the School for Advanced Study, discussed the Dumbarton Oaks conference. The conception of a Security Council and the enormous powers which are given to it for prompt action to resist aggression, he said, is, in a sense, a continuation of the alliance which is now winning the war, and a recognition of the fact that the nations which wield the greatest powers should have a corresponding measure of responsibility.

Dr. Aydelotte expressed the conviction that the United States should support whatever agreement is finally reached. "We can succeed in the establishment of peace," he said in conclusion, "only if we can avoid suspicion and hatred, and act with courage, faith, generosity and good will."

In opening the meeting Governor Edge voiced with dismay the fact that less than two weeks before the convening of the S. Francisco Conference, "to which we all look forward with real hope," he said, "a war-torn world is shocked at intimations of dissent

most serious threats to the evolution of a new basis of instructional collaboration is the sincere but uncompromising perfectionist who is playing directly into the hands of the isolationist. Indeed the isolationist is picking up the perfectionist's arguments and repeating on every favorable occasion the charge of the perfectionist that our allies are playing dirty power politics and that America must keep away from the whole sorry mess. The isolationist would not attempt anything; the perfectionist demands too much. If the nation accepts either viewpoint we shall fail. The effect on public opinion of both is the same, that is, a defeatist attitude towards the possible because the impossible cannot be achieved.

Asserting that Americans have great faith in the power of legislatures and constitutional conventions to change things, the Princeton President said that this faith imputed to other nations blinds us to the historic obstacles to international federation and makes us intolerant of their unwillingness to entrust their security to an international government. "In our haste we forget that social institutions like government cannot be created overnight," he continued, "for they all root in the past, in habit, consent and custom; in emotions as well as in will. We recall the origin of our own federal constitution and we are often unable to understand why other peoples hesitate to apply this example to relations between nations as we did between the thirteen colonies. We too often fail to dig deep enough to learn that the analogy of our federal

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## SOCIAL AND PERSONAL

Colonel Norman H. Schwarzkopf, who has been in charge of a military mission in Persia for the past three years, has returned to this country. Colonel Schwarzkopf who at the present time is in Washington, will spend a month's leave with his family on his return from the capital.

Mrs. Schwarzkopf is the guest for a few days of Colonel and Mrs. Francis C. Endicott of Washington.

Mr. and Mrs. Herman Ward, of Bound Brook, New Jersey, are the parents of a daughter, Gretchen, born at the Princeton Hospital Saturday. Mrs. Ward is the former Miss Marjorie Brarley, daughter of Mr. and Mrs. William R. Brarley, of Princeton Avenue.

Lieutenant (j.g.) David D. Wicks and Mrs. Wicks and their young daughter, Valerie, are the guests of Dean and Mrs. Robert Russell Wicks of Harrison Street.

Lieutenant Wicks is on leave from convoy duty.

Professor and Mrs. Philip Kissam, of Newlin Road, have as their guest, Mr. Lewis C. Sheridan, of New York.

Professor and Mrs. Kissam will be hosts at dinner tomorrow evening in honor of Mrs. Sheridan.

Mrs. Caspar F. Goodrich, of Library Place, has had as her guest, Mrs. Alan Goodrich Kirk, of Washington, D. C.

Mrs. Andrew C. Imbrie, of Hibben Road, is the guest of her sister, Miss Margaret Frazer, of Washington, D. C.

A meeting and tea for women graduates of the University of Pennsylvania will be held tomorrow afternoon at half after two o'clock at the home of Mrs. Samuel G. Craig on Stockton Street.

All alumnae and women students as well as prospective students are invited to attend.

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The Reverend and Mrs. Marshall Harrington, have come from Flemington, New Jersey, to spend part of each week at their home on Mercer Street. The Reverend Mr. Harrington has the pastorate of the Flemington Presbyterian Church, where, with Mrs. Harrington, he returns for the week ends.

Mr. and Mrs. B. Woodhull Davis, of Patton Avenue, returned recently from Port Jefferson, Long Island, where they were visiting Mrs. Davis' mother, Mrs. Thomas Nelson, and Mr. Davis' mother, Mrs. E. E. Davis.

Mrs. Paul Bedford, of Trenton, will be hostess to the members of the Monday Bridge Club at a luncheon meeting next week.

Mr. and Mrs. George A. McWilliams Jr., of Chicago, spent last week end in Princeton. Mr. and Mrs. McWilliams have left for New York and will return this week end to be the guests of Mr. and Mrs. John B. Grover, of Nassau Street.

Mr. and Mrs. Burton H. Morrell, of Mercer Street, were hosts at a cocktail party last Thursday evening preceding the dinner-dance given at Fowler's for the Nursing Staff of the Princeton Hospital.

Dr. J. Mercer Rampona, who has been studying at the Mayo Clinic, in Rochester, New York, has joined Mrs. Rampona and their family at their home on Nassau Street.

Dr. Rampona will report to Camp Davis, North Carolina, next week.

Ensign Herbert H. Hagens, of the Rockefeller Institute, has been passing a leave in Princeton from Harvard University.

Mrs. John H. Merrill and her two children, Laura May Merrill and John Merrill, Jr., have returned from Salem, Massachusetts, where they were visiting Mrs. Merrill's mother, Mrs. William I. Ives.

Mrs. John C. Williams, 2nd., of Library Place, will be hostess to the members of the Stony Brook Club, formerly "The Gardeners," on Tuesday afternoon.

Mrs. Charles Platt, of Chestnut Hill, Pennsylvania, will give a talk on roses.

The Princeton Women's College Club will have a bridge party on Monday evening, April 30th at Miss Fine's School. Members are privileged to bring their husbands as well as other guests.

Mrs. Wendell L. Carlson of the Lawrenceville Road, is in charge of arrangements. Mrs. R. L. Sproull is hostess chairman for the evening.

The Princeton League of Women Voters will have a dinner meeting at the Peacock Inn on Friday evening, April 20th, at 7 o'clock.

Following the dinner, the League will hear two addresses on Health Insurance. Dr. Miles Atkinson, Vice-Chairman of the Physicians' Forum of New York, will speak on "Compulsory Health Insurance," while Dr. Norman M. Scott, Medical Director of the Medical-Surgical Plan of New Jersey, will have for his subject, "Voluntary Health Insurance."

Mrs. Harold H. Sprout, President of the League, will preside.

Mrs. Frederick B. Agard, of Prospect Avenue, has returned from Chicago, where she was visiting Professor Agard, who is a member of the faculty of the University of Chicago.

Dr. and Mrs. Ralph J. Belford, of the Great Road, have had visiting them Mrs. Belford's mother and sister, Mrs. Harry S. Pine, of Sea Girt, and Mrs. Richard Crooks, of Buck Hill, Pennsylvania.

The members of the Princeton Garden Club will be the guests of Mrs. John G. Hun, of Edgerstoune, at a meeting of the Club on Tuesday afternoon.

Mr. Lewis C. Kleinhans came from Pulaskie, Virginia, to spend last weekend with Mrs. Kleinhans and their children at their home on Westcott Road.

Mrs. John Stewart, of Chicago, will be hostess at a luncheon at the President Day Club on Thursday for the members of the Executive Board of the Isabella McCosh Infirmary. The Spring Meeting of the Board will precede the luncheon.

Mrs. James Kinney, who has been visiting her husband, Lieutenant Kinney, who is stationed in California, has returned to Princeton to be with her parents, Dr. and Mrs. Joseph S. Vanneman, of Princeton Avenue.

Mr. and Mrs. Ambrose E. Stevens, of Rollingmeade, have visiting them, Mrs. Stevens' mother, Mrs. Henry Cassel, of Atlanta, Georgia. Mrs. Cassel will go to Florida to take up her residence in Tampa.

Lieutenant and Mrs. John Gilman McCarthy, of Washington, D.C., formerly of Princeton, are the parents of a son born in Washington on Thursday, the fifth of April. The child has been named John Gilman McCarthy, Jr.

Mr. and Mrs. John P. Chubet III, of Edgerstoune, are expecting to have with them in the near future on leave from Italy, Mr. Chubet's brother, Lieutenant Bernard J. Chubet, U.S.A.C., who has completed fifty missions.

Mrs. Dennis Duff Stewart, of Hopewell, New Jersey, and her sister, Baroness Marecola, of Rome, Italy, are occupying the house of Mr. and Mrs. James Renwick Sloane on Cleveland Lane.

The Garden Club of Princeton will hold its second French Market of the season tomorrow morning in the small park at the junction of University Place and Mercer Street.

Mrs. Luther Pfahler Eisenhart will be in charge.

Eric Gugler, New York architect and Trustee of the American Scenic and Historic Preservation Society, will address a joint meeting of the Princeton Chapter of the Daughters of the American Revolution and the Historical Society of Princeton to be held at Miss Fine's School on Tuesday evening at 8 o'clock. Mr. Gugler will speak on "The Preservation of Historic Sites and Places." Members of both societies are privileged to bring their families and friends to the meeting.

### Discuss 'Road to Peace' At Meeting at Trinity

(Continued from page four)

istically the present possibilities of an international police force as an agency on which to rely to keep the peace. Too many good people are doing so, forgetful that this is beginning at the wrong end as the long evolution of law and government proves. Let us realize that any supranational organization must begin modestly. Let us not insist on a supravovernment so all-embracing and unfamiliar that nations would not be prepared emotionally to participate. Let us concentrate on an international organization limited in scope and simple in operation directed to those areas in which world interdependence is strongest and in which international friction is most easily generated. This much I think is possible if we keep our eyes on a limited objective and refuse to be severed from it. Let us remember," he warned, "the terrible consequences if we fail through expecting and demanding too much."

"American public opinion, after the war is causing thoughtful people much worry," said Dr. Dodds. "After the last war we endorsed the League of Nations until its opponents started to work in the Senate. But let us understand that the League failed largely because its members were at no stage willing to trust in it for security. It is important also that we understand how short was the step taken at Dumbarton Oaks, and how unwilling the world is today to abandon time-honored methods for achieving security. Dumbarton Oaks is not an implementation of the Atlantic Charter by any means. I sincerely wish it were and I deplore all efforts of our statesmen to make it appear that it is. Efforts to over-sell it today will bring harmful repercussions later, because it promises to be all we shall have to build on. Let us be sure to exploit its possibilities to the utmost."

Declaring that historically considered, there are equities on both sides of the question of power politics displayed in regard to Poland, Dr. Dodds urged his hearers not to be dismayed by such examples but to be reconciled to the fact that the nations which will manage the immediate post-war world are the ones which have the dominant force. "They are the only powers that can keep the peace in that period," he declared "and keeping the peace for even another twenty-five years is going to be very important of itself if international collaboration is to have a chance to develop. Let us not despair if the terms of the peace contain the familiar concepts of buffer states, Naval and air bases, trade routes and spheres of influence. It is obvious from the course of recent events that nations are not yet willing to entrust their future security to an over-all world organization with its own police power. They are farther along than they were after World War I but there is still a long distance to go. It is highly important to the future development of a world organization that the nations be able to enjoy after the war a sense of security which the Versailles Treaty did not afford. Without this feeling of security no world organization of any importance can be built and put to work. Not even the sketchiest would have a chance to function. Unless we

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get a settlement that will in itself be more trusted and stable than the one after the last war, there will be no environment in which to develop and experiment with any significant agencies of international collaboration."

Referring to the Dumbarton Oaks proposals, he said it is true that they provide little more than an organization for discussion between states. "But such an organization is fundamental," he declared. "We must have this much; on that we cannot compromise. Without we shall certainly have lost the peace. The food conference at Hot Springs, the financial conference at Bretton Woods, the air conferences at Chicago, are modest examples of subjects which can become matters of discussion and agreement when a continuing international organization is set up. I regret that they were not originally made a part of a single international organization, but from this seed there can grow in time a more comprehensive organization to establish the reign of law among nations. An organization for discussion in a climate favorable to collaboration is at this moment more important than all the debates over the Security Council. Failing this, another great war is inevitable. "Let us all compose our differences and unite on this platform," was the concluding plea of President Dodds, "despite our disappointments and criticisms as to the limited scope of the new international agencies now evolving. Let us understand that the attainment of the reign of law among nations will be a long process and that we cannot depend upon any statesmen performing a miracle to achieve it in a world of starved broken and cynical people. Over and over again, nature demon-starved, broken and cynical people from little acorns grow."

Dr. Aydelotte expressed the opinion that the period through which the world is now passing might well be called the most critical period in modern history, through the effort now being made by the Great Powers to agree upon a charter for a general international organization.

"Of all the important questions connected with the Dumbarton Oaks agreement," he said "the most important is the question of the participation of the United States. The State Department has asked the American people to study this agreement and to discuss it. We should do more than that. We should seek wherever possible to make improvements in what is admittedly an imperfect and incomplete document, but above all we should support whatever agreement is finally reached."

Pointing out that American participation in the League of Nations was defeated twenty-five years ago mainly by individuals who professed to support the idea of the League but who objected to various details, Dr. Aydelotte warned that there is danger that a similar catastrophe may happen this time. "It is hardly to be expected that a perfect plan for a world organization should emerge from the confusion and bitterness of the greatest war in history. We should do our best by thoughtful discussion to obtain as good a result as possible. At the same time we should remember that our own people are not agreed on all the details and that we are only one of many nations concerned, so that some compromise will be inevitable."

(Continued on page ten)

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## Employment In State For Veterans After War

New Jersey's veterans can anticipate satisfactory postwar employment conditions in this State partly because of its great diversification in industries, Dr. Charles R. Erdman, Jr., Commissioner of the State Department of Economic Development stated this week.

"More than 1,000 industrial concerns have been located in New Jersey during the last 10 years, and their classifications range from foundries and fur dressing establishments to cosmetic manufacturers."

This information was gathered by the New Jersey Council, a unit of the Department of Economic Development. Among the responsibilities of the Council are those of encouraging industrial development, promoting the wealth producing resources of the state, expanding the markets for New Jersey agricultural products and helping more people to realize that New Jersey is ideal for residence, work and recreation.

Of the more than 1,000 concerns located here since 1935, 672 were either entirely new or moved into New Jersey from another state. The remaining 328 represented expansions of existing plants or transfers from any section of the State to another.

Classification of the 672 new industries was solely on the basis of products manufactured without regard for volume of business or number of employees. The clothing industry accounts for the greatest number of new establishments in New Jersey, having 9.1 per cent of the total.

Textile manufacturers are second with 7.9 per cent. Food products account for 7 per cent; electric equipment, 6.4 per cent; chemical 6.1 per cent; metal working 5.5 per cent and paper containers and products, 4.5 per cent. Other new plants, classified according to their frequency in the State area: woodworking, machine and tool shops, aircraft, building materials, pharmaceuticals and cosmetics, machinery, plastics, automotive equipment, paints and varnishes, steel and fabricated products, non-ferrous metals, rubber products, smelting and refining, fur dressing and dyeing, foundries, leather and leather prod-

ucts and cold storage and quick freezing.

Despite this wide listing of types of business 17.7 per cent of the new industries still fall in the miscellaneous category covering a wide field of products from buttons to battleships and including industrial laboratories of the most modern construction.

Dr. Erdman pointed out that the great diversification of business in the State gives returning veterans a wide choice of occupations and helps to insure them against seasonal unemployment.

The New Jersey Council's classification of new industries also revealed that "specialty areas" in the State are disappearing. "Once Paterson was known exclusively for its silk manufacturing and Trenton for pottery," Dr. Erdman recalled. "Today there is a great variety of articles manufactured in these former specialty areas."

(Continued on page seven)

## DR. AYDELOTTE CONTINUES AS HEAD OF INSTITUTE

(Continued from page one)

had only a limited amount of schooling, he possessed an instinct for excellence." He and Mrs. Fuld "sought no recognition for themselves" and desired only to make the Institute "as useful as possible to higher learning in America."

The Bulletin reports that while heavy demands have been made by the war on the Institute's faculty and members, the burden is now decreasing. Professor Winfield W. Riefler has returned to the staff after two years as Minister to England in charge of economic warfare. Professor Edward M. Earle who has been consultant to the War Department and Professors Veblen, Marston Morse and John von Neumann, who have been engaged in scientific research, are giving an increasing amount of their time to the Institute.

Included in the Bulletin is a report on the activities of the Economic, Financial and Transit Department of the League of Nations which has been housed in Fuld Hall of the Institute since it left Geneva in 1940. The report is devoted primarily to the publications of this branch of the League,

## MAJOR ARCHER TELLS OF EXPERIENCES AS PRISONER

(Continued from page one)

hopelessness of their situation which descended upon some men proved as fatal. Some were so crushed by the long years of captivity that they died simply because they had no will to live. Survival under the starvation diet and blows and tortures of their guards was so difficult that Major Archer thought only a few thousands of all the American troops have lived through their imprisonment. He attributed the survival of many soldiers to the fact that secret radios were built and ever since they first picked up news of the American landings on Guadalcanal, the hope which then flickered in their hearts never died and faith in ultimate rescue kept them alive.

Every woman in the United States who had a husband, son or brother in the Philippines owes a debt to the Philippine women so great it cannot be repaid. The prisoners managed to exist only by paying their Japanese guards to procure additional food for them, miserable as it was. When their own store of money ran out, the Philippine women formed an extensive underground which gathered together money, in all amounts, which they gave, unsolicited, to prisoners whom they did not even know personally, to buy food from their guards at exorbitant prices. When their sources of money, so generously given by all classes at extreme personal risk, were finally exhausted in 1944, the situation became so desperate that it could be resolved only by the liberation, which came in the nick of time.

The Japanese made the prisoners organize themselves into squads of ten; if one man in a squad tried to escape or did escape, the other nine in his squad were put to death. Major Archer told how four men had once crept outside the stockade to get some food and were detected returning with it. Not only were they hung up by their hands in a pelting rain, tortured, and then shot but the other six men in their squad were also murdered.

The Americans were outnumbered 10 to 1 in the Bataan campaign, he said. "At the time of Pearl Harbor," he went on, "we were preparing but

we were caught sleeping. The air force was destroyed the next day. On December 10th Cavite, the naval base, was destroyed but luckily the ships had already pulled out and so the Japanese victory at Cavite was a hollow one. If instead they had bombed our supply area, which they couldn't find, they might have won much sooner. As it was, we immediately went on half-rations. Malaria and dysentery were rampant and for several days before the surrender many men had no food at all."

Major Archer, having been wounded in the lung on April 1st, was hospitalized after the surrender and so escaped the frightful death march. He was imprisoned in Cabanatuan from May 29, 1941, until November, 1944, when he was transferred to a prison camp at Fort McKinley. There the Japanese threw a heavy cordon of anti-aircraft guns around the prisoners, hoping that this maneuver would compel the American planes to desist from bombing the guns. The American planes came over, took pictures, and the following day returned to bomb the Jap emplacement with such accuracy that the guns were blown out of commission but the American prisoners were untouched.

Major Archer was soon after sent to Bilibid prison. The American troops arrived on February 4th, but deliverance was delayed for five days until the rescuers themselves were reinforced. He then proceeded by plane to Leyte, by boat to New Guinea, and thence to San Francisco where he arrived March 16th.

He attributed his own survival to the fact that his previous years of service had inured him to hardships. "Men from 24 to 30 suffered the most," he said. "They seemed to need more food and they couldn't stand the brutalities of their guards." He told of one guard who gave a prisoner a cigarette, exchanged a word or two, and suddenly beat him viciously over the head with a club.

Major Archer's trim, erect figure,

impeccable military bearing and penchant for adventure were immortalized by Richard Harding Davis in his novel about the Honduras revolution, "Captain Macklin," which appeared in 1902. His own book of reminiscences, "Mr. Archer, U.S.A.," as told to Rutherford Platt, was published in 1924. He has served in the United States Army for 49 years, taking part in the Cuban, Mexican and Spanish campaigns, the Boxer Rebellion incident in China, the first World War, and both Philippine campaigns. He was, for a number of years, a member of the Princeton R.O.T.C. staff. He wears the Purple Heart and a Presidential Citation with two clusters.

"Organized war in Europe," he predicted with a cool disregard for the perils of printed prophecy, "will be over April 20th. A few days ago I said the 15th but now I'll bet on the 20th." That date will also probably find him at Camp Dix where he will report soon for medical treatment. Major Archer will retire following a four-months' leave. Even today, he said, Mrs. Archer, their two sons, Royal Macklin Archer, 16, and Herman N. Archer, Jr., 13, and he are looking forward to returning once again to the Philippines.

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THE PRINCETON HERALD, FRIDAY, APRIL 13, 1945

## Discuss 'Road to Peace' At Meeting at Trinity

(Continued from page five)

Speaking of the Security Council and the enormous powers which are given to it for prompt action to resist aggression, Dr. Aydelotte called it the most revolutionary idea of the Dumbarton Oaks proposals and asserted that it is, in a sense, a continuation of the alliance which is now winning the war. "It is a recognition of the fact that the nations which wield the greatest powers should have a corresponding measure of responsibility," he said. "It is a recognition also of the fact that these Great Powers could not coerce one another without the catastrophe of a world war."

Outlining the functions of the new international organization he said that the positive and constructive functions are to be vested in the Assembly and in the Economic Council, which are organized on a democratic basis. "To these bodies," he continued, "are entrusted the responsibility of taking steps to promote human welfare, to stimulate international trade, to study such problems as health, food and agriculture, education, international communications, and the reduction of armaments. These are the means which must be used to bring the nations of the world together. They constitute the real hope of enduring peace."

Certain very important questions not settled at Dumbarton Oaks will presumably be dealt with by the conference at San Francisco, said Dr. Aydelotte. "Among these are the problem of dependent powers and colonies, and the whole theory of trusteeship which underlay the mandates principle of the League of Nations. Another problem, still more difficult, is the question of an international bill of rights. Others are the World Court and the question of the means to be taken to liquidate the League of Nations and to transfer to the new organization its powers and responsibilities."

Reminding the audience that the problem of making peace and the treatment of Germany and Japan are specifically excluded from the conferences dealing with the new world order, he said that the terms of peace are to be settled solely by the powers which are winning the war.

"These are great days in modern history, full of immense possibilities for good or evil," said Dr. Aydelotte in conclusion. "In considering such prob-

lems as those dealt with at Dumbarton Oaks and those to be discussed at San Francisco, we must remember that there is no such thing possible as absolute security. We cannot avoid all the dangers ahead of us. We can succeed in the establishment of peace only if we can avoid suspicion and hatred, and act with courage, faith, generosity, and good will."

In his opening remarks Senator Smith who had just arrived from Washington paid tribute to President Roosevelt.

Stating that he had been assigned the special subject of "Milestones on the Road to Peace," he pointed out that during the last few years we have seen in the United States the evolution of a national conviction. "We have moved," he said, "from hesitation and doubt as to the wisdom and safety of our cooperation in some form of world program for the preservation of the peace to a deep national conviction that this is very definitely the way ahead for us.

"In 1942 I had the privilege of attending the April and December meetings of the Republican National Committee which went on record committing our party to the principle of international cooperation," said the Senator. "In September of 1943 there assembled at Mackinac Island in Michigan a group of Republican leaders which included Senators, members of the House, all of our Republican Governors and certain members of the National Committee of which I had the privilege of being one, which group formally issued the Mackinac Declaration.

"Here were three milestones in the history of our party looking towards a national policy, and these milestones were shortly afterward followed by the Fulbright Resolution in the House of Representatives, and the Connally Resolution in the Senate, both passed by overwhelming bipartisan votes.

"Almost simultaneously Secretary Hull participated for the United States in the Moscow Agreements, which declared the same principle. At both the Republican and Democratic conventions of 1944 the policy was reaffirmed.

"In the fall of 1944 and following the conventions, but prior to the elections," said the Senator, "the Dumbarton Oaks conferences were held under the leadership of the present Secretary of State. And very recently we have had reported to us the conclusions arrived at, the Yalta Conference in the Crimea, and the Act of Chapultepec in Mexico which add new and most important milestones to the series.

"The Yalta Conference was a most important milestone," he declared. "It caused consternation, however, in one important respect. I refer to the Polish boundary dispute. The reason why the disposition of the Polish boundary question shocked people in this country was because, in the first instance, it was a decision by a great power acting unilaterally—a decision made apparently at the expense of a weaker power, one of our allies. The ratification of this act by Great Britain and the United States seemed diffi-

cult to defend. This action apparently violated a fundamental principle actually set forth in the Atlantic Charter for which the war is being fought.

"The important point I wish to make is that decisions of this kind should be made by the United Nations acting together with ultimate justice as their objective, and with the rule of might once and for all abandoned.

"This is the pledge of the Atlantic Charter—the pledge of a world composed of interdependent nations seeking justice and peace—a world in which all people shall be protected in their inherent right to determine their own destinies.

"It is my conviction," said the speaker, "that the United States should insist on the establishment of this principle now. It is my opinion that the action at Yalta on this particular question should be considered a provisional settlement only and should be reviewed, approved or if necessary modified, after the world organization is set up.

"But in spite of this apparent failure to insist on the spirit and performance of the promise of the Atlantic Charter, Yalta was a most important milestone. We find ourselves continuing on the right road, and we see the continued evolution, not only of our national convictions, but the convictions of the United Nations as well.

"We can only hope and pray for the outcome at San Francisco," said the Senator, "but certainly the direction in which our road leads us must be towards the freedom and security of all mankind. These objectives are difficult to attain, but those of us who have the responsibilities of government, whether Executive or Legislative, have the duty, as far as within us lies, to find the answer to war. Our boys who are today facing the battle line on the Western Front in Europe or in the islands of the South Pacific are not interested in our politics, but are definitely asking what we at home propose to do to save their sons from a repetition of this terrible tragedy in another twenty-five years. None of us can say we have all the answers, but these milestones indicate that we are

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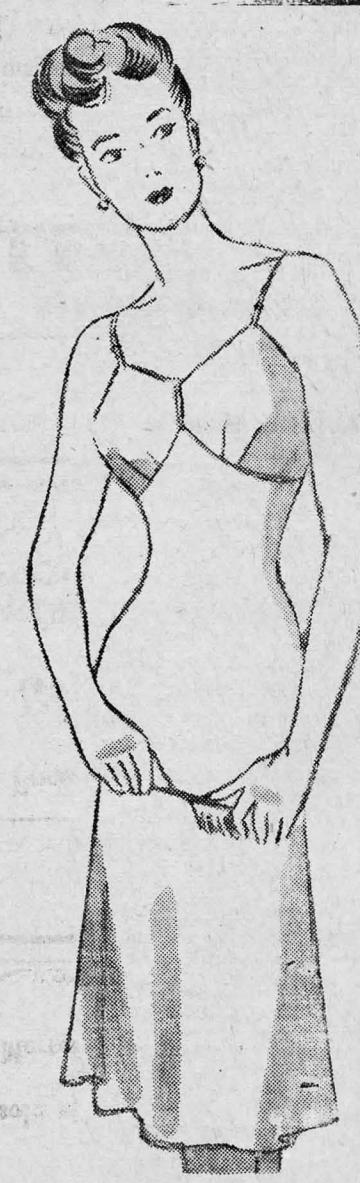
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3 P. M.

Friday, Saturday

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"HOTEL BERLIN"

## Institute for Advanced Study Extending Influence Under Dr. Aydelotte

Staff Correspondent

PRINCETON — Founded in 1930 on endowments of several million dollars by Louis Bamberger, Newark merchant, and his sister, Mrs. Felix Fuld, the Institute for Advanced Study has completed a decade of work in the field of scholarship and today the lamp of learning is shining more brightly than ever before in its short history.

March 16, 1941  
In the first 10 years we have merely laid the foundations for the work that we hope ultimately to do," Dr. Frank Aydelotte, director, remarked in an interview. Dr. Aydelotte, a trustee of the institute since its creation, succeeded its first director, Dr. Abraham Flexner, on the latter's retirement in the autumn of 1939.

Now approaching 61, Dr. Aydelotte has the vigor and enthusiasm of a man much younger. His own field of scholarship was English literature, and it is a bit ironical that the institute at present does no advanced study at all along this line, except as it may be incidental to the humanities in general.

Possibly some day the institute will add modern literature to its program. Certainly one gets the impression that Dr. Aydelotte would enjoy supplementing administrative duties with a return to research in his own major field of interest.

### Notable as Educator

Dr. Aydelotte's career in education has been long and varied. A one-time Rhodes scholar at Oxford, he has taught in high schools as well as in colleges, and his presidency of Swarthmore College for almost two decades brought him universal acclaim as one of the ablest American college administrators. He has been American secretary of the Rhodes Scholarship Fund trustees since 1918. Long active in the affairs of the Phi Beta Kappa scholastic honor society, he has for 12 years been a member of its Senate, his current term expiring in 1943.

For the 1939-1940 academic year, Dr. Aydelotte served as head of both the institute and of Swarthmore. Last September, however, he severed his 19-year-connection with Swarthmore to become full-time director of the institute. He and his wife established their home in an 18th century country house within sight of the institute campus.

One indication of his independence of spirit is the fact that during his long regime at Quaker-controlled Swarthmore he came to have deep admiration for the tenets of the Society of Friends. But knowing that any public conversion on his part would be misinterpreted, he did not become a Quaker himself until after he had resigned the Swarthmore post.

Dr. Aydelotte indicated that the institute was proceeding along the lines laid down by his predecessor. It was Dr. Flexner, longtime critic of American university life, who had fired the imaginations of Mr. Bamberger and Mrs. Fuld with his portrayal of what a college exclusively devoted to advanced scholar-



Bachrach Photo.  
**Dr. Frank Aydelotte**

tain, however, that the institution has already quickened intellectual life in many directions. To be allowed to pursue advanced research under its auspices is counted a high distinction, and one eagerly sought after.

"Our job is to encourage productive scholarship," Dr. Aydelotte remarked. If we can take a college teacher and let him do a year of study here, and then send him back to his college job with new enthusiasm for a life of learning and a new zest for continuing to produce in the field of scholarship, our institute will be a success.

"As Dr. Flexner pointed out in his criticisms of university life, all too often in America efforts at productive scholarship ceased as soon as the student had received his Ph. D. degree. In fact, college officials sometimes were inclined to believe that a man (or woman) could be a good teacher even though a poor scholar."

"We at the institute insist that a really fine teacher of college grade must be a scholar as well to bring out the best that is in his students. Also, we believe that a genuine scholar inevitably will be a good teacher, because his own enthusiasm for his subject must communicate itself in some degree at least to his classes."

### No 'Ivory Tower'

Notwithstanding its emphasis on scholarship, the institute is no "ivory tower," sheltering men and women who wish to have nothing to do with the workaday world. Since some of its faculty members and students are refugees from the war zone, it knows only too well what is going on in the world.

There is, for instance, the professor of humanistic studies who was forced to leave Persia and has decorated his office suite in the institute with his cherished Persian rugs and tapestries, and has placed his precious potteries in a special alcove. There is another professor, in the archeological field, who has on one door a huge poster

secret, computations for the War and Navy departments, thus giving proof of the way that the "purest" of all the "pure sciences" can be made a handmaiden to Mars.

The institute, as has been told before, confers no academic degrees or awards. It offers, with tuition free, a year or more of advanced study along certain lines to men and women who show promise as scholars. Under the guidance of the faculty members, they pursue their research in some specialized subdivision of a general field.

### Not Part of University

The institute is not, and never was, a part of Princeton University, but the two institutions co-operate closely and share their library and other research facilities. Students in the university's own Graduate School can take courses at the institute, and vice versa. The two faculties collaborate on many projects, such as the publication of scholarly monographs and periodicals.

The institute's staff contains about 30 persons, and there are approximately 70 "members," as the students are called, so the whole community has about 100 scholars. Fuld Hall, gift of the founders of the institute, was opened in the fall of 1939. Prior to that, the institute's work had been carried on in buildings of Princeton University, and much of its mathematical research is still conducted in the university's Fine Hall of Mathematics, with Prof. Albert Einstein of the institute's faculty

## Institute Cherishes 20,000 Copies of Greek Inscriptions

The Institute for Advanced Study takes particular care of its 20,000 "squeezes" of inscriptions from stone tablets dug up in the Agora, the market-place of ancient Athens. These "squeezes" are impressions made with dampened filter paper and then allowed to dry.

If Athens should be so heavily bombed in this war that the original tablets were destroyed these filter paper duplicates at the institute would be the only records anywhere in the world of an important phase of ancient history.

Incidentally, the impressions are in reverse, so you must be able to read Greek from right to left in order to decipher them.

continuing his investigations of relativity.

The institute at present has a school of mathematics, a school of economics and politics and a school of humanistics studies. In the last-named, the emphasis is on archeology and Oriental art. Later, the institute may branch out to provide research in other fields. The founders imposed no hampering restrictions.

## ADVANCED SCHOOL TO START BUILDING

Institute at Princeton Will  
Begin at Once First Unit  
at \$500,000 Cost

### TO BE NAMED FULD HALL

Structure Will Contain Study  
Rooms, Library, Offices—  
2 Added to Faculty

Special to THE NEW YORK TIMES.  
PRINCETON, N. J., Oct. 13.—Announcement was made at the Institute for Advanced Study here today of the immediate construction of the institute's first building, to cost approximately \$500,000. The building will be erected on a 400-acre tract recently acquired by the institute on the outskirts of Princeton.

The announcement of the building program and of new appointments to the faculty was made by Dr. Abraham Flexner, director of the institute. The institute now uses the facilities of Princeton University.

The Institute for Advanced Study was founded in 1930 by Louis Bamberg and his sister, Mrs. Felix Fuld, with an initial endowment of \$5,000,000. In October, 1933, the first unit, the School of Mathematics, was opened with Professor Albert Einstein as a member of the staff. An anonymous gift of \$1,000,000 for the establishment of a School of Economics and Politics was announced in April, 1934, and this unit was opened the next year with a third unit, the School of Humanistic Studies. In April, 1937, the institute announced its general endowment funds had been increased to more than \$8,000,000.

### To Be Named Fuld Hall

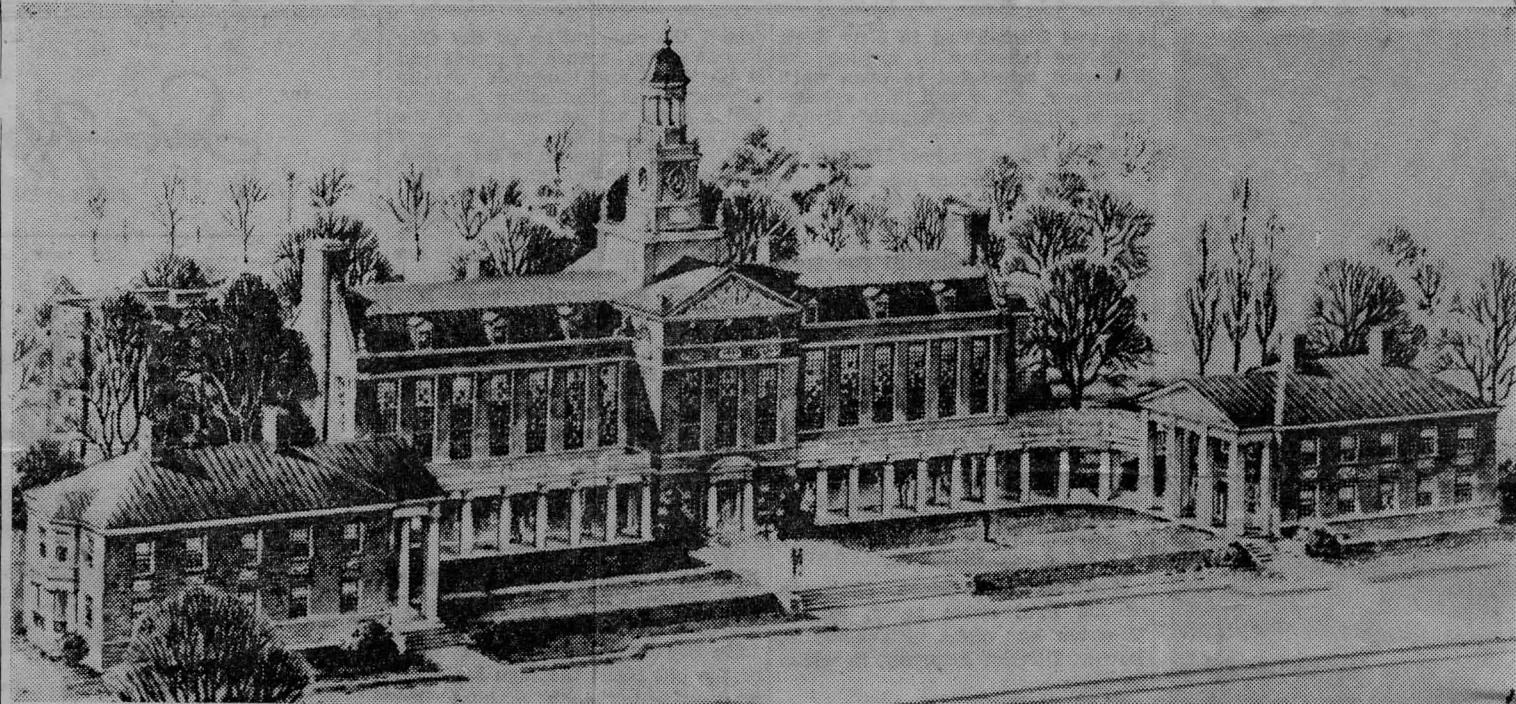
According to the plans announced today, the institute's first building will be constructed of brick and will be of colonial and Georgian design. It will be known as Fuld Hall, in memory of Mrs. Fuld's late husband, and will contain separate studies for each faculty member and student of the institute.

The buildings also will house the administration quarters, seminar rooms, lounges, a library and lunch rooms, but will contain no living quarters. It is expected the building will be completed by next September. The architect is John Frederick Larson of Hanover, N. H.

The faculty appointments announced were to the School of Economics and Politics. They are Walter W. Stewart and Robert B. Warren. Mr. Stewart has been a member of the faculties of the Universities of Missouri and Michigan and of Amherst College. He organized and directed the Division of Research and Statistics of the Federal Reserve Board in Washington between 1922 and 1925 and was American adviser to the Bank of England from 1928 to 1930. In 1931 he became the American adviser of a committee appointed by the Bank for International Settlements to investigate the ability of Germany to resume reparations payments under the Young plan.

### Warren Taught at Harvard

Mr. Warren, who was graduated from Hamilton College, has been a member of the faculties of Robert



FIRST BUILDING PLANNED FOR THE INSTITUTE FOR ADVANCED STUDY

A drawing of Fuld Hall to be erected at a cost of \$500,000 at Princeton, N. J. It was designed by John Frederick Larson of Hanover, N. H.

## Train Adieu Is Trespass If Car Starts, Court Says

ATLANTIC CITY, Oct. 13.—Because, according to a ruling of the court, she was a trespasser upon railroad property when a train she had boarded to see a friend off started, the \$30,000 injury suit brought by Mrs. Edward L. Kjeldson against the Pennsylvania-Reading Seashore Lines was dismissed today by Judge Wilfred H. Jayne in Atlantic County Circuit Court here, on motion of counsel for the railroad.

Mrs. Kjeldson brought the suit as the result of injuries she received two and one-half year ago. When the case came up today counsel for the railroad argued that while the train was standing still in the station she was legally regarded as an "invitee" and guest of a passenger. The moment the train started, however, he contended, she became a trespasser on railroad property.

College in Constantinople and Harvard University. Between 1922 and 1926 he was associated with Mr. Stewart in the Division of Research and Statistics of the Federal Reserve Board.

Dr. Flexner also announced that among those studying and doing research work at the institute this year are Dr. Niels Bohr, Professor of Mathematical Physics at the University of Copenhagen and the 1922 Nobel Prize winner in physics; Professor Ioannes Threpsiades, assistant director of the National Museum at Athens; Professor Paul Tedesco of Vienna, Dr. Claude Chevalley of the University of Paris, Dr. Kurt Goedel of the University of Vienna, Dr. J. Rumney of the London School of Economics, Miss Gertrude K. Stanley of Westfield College of the University of London, Professor I. I. Rabi of Columbia University, Professor Gustav A. Hedlund of Bryn Mawr College and Miss Dorothy Manning of Stanford University.

## SCIENCE IN THE UNITED STATES

From our Scientific Correspondent

The decay of international relations in Europe has enhanced the importance of the progress of science in the United States. The rate of good scientific discovery has declined in Europe since 1933, as the increase in England and France since that year has not equalled the decrease in Germany and Austria. It is therefore encouraging to find that science is progressing swiftly in the United States. Progress up to 1920 had been relatively slow. This was due to several factors, such as the absorption of energy in settling new country, the strength of the classical tradition in the older American universities, and the almost universal custom of making postgraduate studies in Germany. American scientists could not achieve sufficient intellectual self-confidence under these conditions.

Complete emancipation began during the war of 1914-18, when post-graduate study in Germany abruptly ended. It has been followed by a large number of first-rate discoveries made by American scientists. Before 1923 Americans had received only three Nobel prizes for science; since 1923 they have received ten. Professor H. C. Urey, of Columbia University, New York, the discoverer of heavy hydrogen, related to me his own experience during this period. He was born in Indiana, where his grandparents were the first settlers. He graduated in zoology, and during the war entered chemistry. He did not like industrial work, so after the war he returned to the university to study pure chemistry. He was awarded a fellowship in 1923 which enabled him to work in the Institute of Theoretical Physics at Copenhagen. There he received a deep impression of the subtlety of the best European scientific thought. Returning to Europe nearly fifteen years later, he found a remarkable relative change. American laboratories were now generally better equipped than European laboratories, and Americans could hold their own in ideas. As this change is proceeding rapidly, American world-leadership in science may soon become pronounced.

The progress of native American achievement has assisted the better use of the large number of eminent scientists who have arrived recently from Central Europe. The most remarkable development of this is at the Institute for Advanced Study, which was started at Princeton, New Jersey, in 1930. Within eight years its school of mathematics has become the most active in the world. The institute was founded by Mr. Louis Bamberger, a wealthy store-owner of Newark, New Jersey, with an initial gift of five million dollars. It is directed by Dr. Abraham Flexner, a former secretary of the Rockefeller General Education Board. It has no buildings, but its members are given hospitality in the departments of Princeton University. The mathematicians meet in Fine Hall, the mathematical building of the University. Many of them have no study in Fine Hall, and Dr. Flexner's tiny office is on a floor of a small commercial building in the town.

The most famous member of the staff is Professor Einstein. He appears to be happy there and looks in good health. Professor Oswald Veblen has an important part in the management of the mathematical school. Besides being a great mathematician he is a nephew of Thorstein Veblen, the most original American political philosopher. He was reared in Iowa City which in his youth had a strong equalitarian atmosphere. Professor Veblen's wide interests have done much to unify a diverse body of scholars. Other eminent mathematicians on the staff are Professor Hermann Weyl, who works on the relativist theories of the structure of the universe, and Professor von Neuman. The professors in the Department of Economics and Politics are E. M. Earle, who works on the economic and historical bases of American foreign relations; D. Mitran, who is studying the relation between national and international theory and the adaptation of political

forms to social change; and W. W. Riefler, the authority on financial theory. The Department of Humanist Studies includes Professor Meritt, who is studying Greek inscriptions concerning the tribute paid by the Athenian Empire, and Professor Panofsky, the authority on the secular iconography of the Renaissance.

In addition to the staff of twenty-nine scholars the institute has forty visiting members engaged in research, and during its short existence has already drawn scholars from twenty countries.

The raising of the quality of research is not confined to academic institutions. An interesting plan for assisting fundamental research has recently been launched by the Westinghouse Electric and Manufacturing Company of East Pittsburg. It has founded ten research fellowships with stipends of \$2,400, or £480, per annum, which may be held by investigators who wish to pursue pure research in the company's laboratories. The company believes that a better understanding of the nature of matter and energy will ultimately prove valuable to technology even though its immediate field of application is not apparent. It considers that the scheme will acquaint a group of able investigators with the scientific problems of the electrical industry, and that this will be fruitful whether the fellows turn to industrial research or to academic work after the completion of the period of their fellowship. Dr. E. U. Condon, the well-known theoretical physicist, has been appointed supervisor of the programme of fundamental research.

I was informed that the Westinghouse Company's experience during the American economic crisis of 1932 had influenced them in the foundation of this scheme. Like many other big companies they discharged a large number of research workers in order to reduce expenditure, and they found that this had handicapped them in the market when recovery began. A few companies, and notably the Du Pont Chemical Company, followed the contrary policy and encouraged research during the crisis. Their staff discovered several new industrial processes during this period, and when industry revived these proved to be profitable.

The Westinghouse men may work in the fields of nuclear physics, electric conduction in gases, ferromagnetism, dielectrics or insulators, thermionics, semi-conductors, elastic and plastic properties of metals, and crystal structure. Among the equipment is a huge high-voltage generator for accelerating streams of particles for disintegrating atoms. The apparatus is of the Van der Graaf type and is enclosed in a large steel pear-shaped chamber about fifty feet high, which may be filled with air at a pressure of 64lb. per square inch. When I examined this chamber it was being washed out by mechanics in oilskins in order to remove dust from the inside surface. The removal of dust reduces the tendency for sparking between the electrode and the inner wall.

An apparatus which generates voltages of several millions in air at atmospheric pressure must be housed in a large hall if sparking between the discharge sphere and the walls is to be avoided. As air at high pressure is a much better insulator than air at atmospheric pressure, the size of the enclosing chamber may be reduced if the pressure of the air inside is raised. The high-voltage current will also be steadier and the experimental results more accurate. Another of these steel, high-pressure, high-voltage "pears" is being built for the Bureau of Standards in Washington.

So far as I am aware no "pear" is as yet being erected in England. The Americans have much more high-tension apparatus for atomic research than exists in England and have made valuable discoveries with it. But the best of their work is still not as accurate as that in the Cavendish Laboratory, though the standard of accuracy is continually rising.

# Atomic Age Bringing Notable Change To Quiet Institute for Advanced Study

By MILTON MARMOR

PRINCETON, N. J.—(AP)—A gradual, but notable change from a highly abstract to a practical level of study is quietly taking place at the institute for advanced study, a center of learning unique in the history of education.

A new director, recognized for his scientific and educational talents as well as for his organizational abilities, has brought his boundless energies to this gathering of great scholars in the idyllic calm of Princeton town.

He is Dr. J. Robert Oppenheimer, a professor of mathematical physics who served as wartime director of the Los Alamos laboratories of the Manhattan project when it developed and produced the first atomic bomb.

Perhaps never before in the long book of learning has there been an educational institution comparable to this academy of the atomic age.

#### High Standards Required

The high standards, the freedom of study that have characterized the institute are still here. A student still needs a Ph.D. degree to enroll. (Incidentally, they are not called students. They are called members of the institute.)

The aim is the same—to advance the field of human knowledge, either of past cultures, or of the social and economic problems of today, or of mathematics, or of new fundamentals in the understanding of the physical world.

Actually, the institute didn't get underway until three or more years after 1930. The early years found the institute operating without any physical plant and with little central activity.

Scholars came from all sections of learning in the world and did what they did on their own. They rarely met and, in the words of one leading scholar, the institute had the aspects of some strange "disembodied thing."

#### No Definite Plans

The 42-year-old Dr. Oppenheimer, known to his associates as "Oppy," disclaims any definitive plans for the future, except as they may develop in discussion with the faculty and the trustees.

"It is to be hoped," he explains, "that an institute of this kind will create a climate where something more will come out of it than through individual, isolated efforts."

Members who desire to work alone will continue to do so but Dr. Oppenheimer feels that there should be opportunities for joint endeavor.

When the institute was founded, Dr. Abraham Flexner, the first director, said, "All we are trying to do is to provide a place where great scholars can sit and think."

Dr. Oppenheimer, successor to the retired Dr. Frank Adeyotte, sees in his group of about 75 members, four permanent members and 15 faculty members, a concentration of scholastic minds without a comparison in educational files.

#### Unique Concentration

"I would say that in the best universities there could be found comparable scholars, but there they are more diluted. Here, there is a unique concentration."

He has high praise for the brilliant contributions made here in the years since the members and faculty first pledged to "push be-

yond the limits of human knowledge." Great strides have been made, especially in the field of mathematics. The studies are divided into three fields: mathematics, humanistic studies and political science and economics. The scope of work at the institute has always been limited to a few fields, far fewer than would be required at a graduate school.

The institute does not have a Shakespearean authority, but is outstanding in Hellenistic studies. Its mathematics and physics studies are of the highest calibre, but other sciences are not represented at all.

#### Einstein Among Scholars

The best known of the advanced mathematics scholars is Dr. Albert Einstein, still actively lecturing or sitting in as others discuss developments in this field.

The near future will see the arrival here of such varied intellects as T. S. Eliot, the British poet; Dr. Nils Bohr, the Danish physicist; and Dr. Arnold Toynbee, the British historian.

The institute's scholar-professor relationship is something utterly different from that of a regular college.

Take a typical member-scholar.

He gets up at 7 a.m., mainly because his two children make so much noise at that time of the morning. He resides with his wife

and children at the institute housing project a short walk from Fuld hall. He happens to be about 28 years old, although the age limit ranges from 21 to 70.

This member is a professor of mathematics at an Eastern university. He is here to study for at least a year, specializing in analysis.

#### Seminars on Tuesday

On Tuesdays he tries to make a seminar being conducted at 9:30 a.m. The other Tuesday when Einstein lectured the class jumped in size from 20 to 75. Many came over from Princeton university—which is not connected with the institute—to listen to and to see the famous man.

The member-scholar, in question, may lead the class himself on another seminar day. He has an office in Fuld hall where he works on his problems. Some days, he finds himself at it for 16 straight hours. Some times, he takes a week off and relaxes.

Relaxation to him means a trip to colleges in the eastern area to deliver several lectures, meet new people and prepare speeches.

One of the most noticeable aspects of life at the institute is the virtual impossibility of differentiating between a member-scholar and a member-professor. The difference isn't even one of degree. Most of those at the institute have their full quotas of advanced diplomas.

## Tennessee Spotlight

# State TB Death Rate Cut Half in Past 20 Years

By NELLIE KENYON

Tennessee's tuberculosis death rate has been cut by more than one half in the last 20 years to reach the lowest on record.

Tuberculosis was listed lowest among the seven principal causes of death in 1946 in the state health department's annual report.

The decline was far greater among the state's Negro population in the 20 years than its white population.

Dr. R. H. Hutcheson, state health commissioner, reported 1633 deaths from tuberculosis in Tennessee last year.

#### Slacks for Coeds

Several queries have been received recently by the state education department concerning the propriety of girls wearing slacks to school.

Authorities have taken the position that the question is one for local school authorities to determine, pointing out that the state has no jurisdiction over such matters.

Harry Carter, administration assistant, state education department, personally thinks that slacks are all right for school girls.

One such inquiry was received from an interested citizen in an East Tennessee county. He reported that a girl had been sent home twice by her teacher because she appeared at school in slacks.

A father from a Middle Tennessee county visited the department lately to know what to do about his daughter wearing slacks to school. He is understood to have been advised to let his daughter wear them.

Slacks, said Carter, are particularly appropriate for little girls who have to stand and wait for school busses during the cold winter months.

#### Increase in Wages

The state employment security department reports that the number of workers receiving wages in excess of \$3,000 annually has in-

creased greatly in Tennessee since World War II.

#### Long Career Ends

Lewis Carney, 77-year-old Nashville Negro, who has served as porter for the secretary of state's office for 27½ years, will be given a disability pension early next year.

Carney has been on sick leave and was notified last week that his pension application had been approved.

He saw service in the army during the Spanish American war, volunteering to work in an army hospital in Cuba during the yellow fever epidemic.

## Welles Cites Russian Threat

NEW YORK—(AP)—Soviet Russia has decided upon a policy of aggressive expansion and if she is allowed to dominate Europe, the Near and Far East, there will be no safety for the people of the United States, former Undersecretary of State Sumner Welles declared yesterday.

Welles made his statements in the magazine "Successful Farming," which is running a series of articles on the U. S. in world politics after its poll showed that 5 per cent of farmers had never heard of the Marshall plan and only 11 per cent knew what it was about.

## 7200 Corners

HARTFORD, III.—(AP)—D. H. Gardner, an oil refinery pipefitter, began saving \$2 bills in 1941 when his wife gave him ten of them for a Christmas present.

He kept adding to his collection by exchanging currency of other denominations with friends.

Yesterday he walked into the used car establishment of Nelson Cook and purchased a 1946 model for \$1,800, all in \$2 bills.

VISIT

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NEW YORK TIMES

APR 25 1934

**\$1,000,000 GIFT AIDS  
FLEXNER INSTITUTE**

School for Advanced Study at  
Princeton Is Beneficiary of  
Anonymous Donor.

**ENDOWMENT IS INCREASED**

Louis Bamberger and Mrs. Felix  
Fuld, Founders, Made Life  
Trustees at Meeting Here.

Special to THE NEW YORK TIMES.

PRINCETON, N. J., April 24.—Dr. Abraham Flexner, director of the Institute for Advanced Study at Princeton, announced here today that an anonymous gift of \$1,000,000 had been received by the institute to facilitate the organization of the school of economics and politics, which was decided upon some time ago.

The gift was disclosed at the annual meeting of the trustees of the institute held in New York yesterday and will be added to the initial endowment of \$5,000,000 given by Louis Bamberger and Mrs. Felix Fuld at the time the institute was established by them in 1930.

At the annual meeting yesterday Mr. Bamberger and Mrs. Fuld were made life trustees of the institute with all the powers of the regular trustees.

Frank Aydelotte, president of Swarthmore College and Dr. Florence R. Sabin of the Rockefeller Institute for Medical Research were re-elected trustees, their terms having expired. Professor Oswald Veblen, a member of the institute staff, was made a member of the corporation and was elected a trustee of the institute.

Officers were elected as follows: Chairman, Alanson B. Houghton; vice chairman, Herbert H. Maass and Walter W. Stewart; treasurer, Samuel D. Leidesdorf; assistant treasurer, Ira A. Schur; secretary, Frank Aydelotte; assistant secretary, Esther S. Bailey. Dr. Flexner was reappointed director of the institute.

The Institute for Advanced Study was established in 1930, but up to now only the school of mathematics, which was opened in October, 1933, has been functioning. No definite plans have been announced regarding the opening of the new school of economics and politics.

## WEATHER 'BRAIN' IS SET UP BY ARMY

New System Found Fastest  
and Most Accurate Yet—  
Can Chart Jet Stream

This is the second part  
of a three-part section con-  
sisting of 134 pages. The  
news summary and index  
will be found on Page 95.  
Society news begins on  
Page 89 and obituary arti-  
cles will be found on Pages  
86 and 87.

Special to The New York Times.

FORT MONMOUTH, N. J.,  
Nov. 23—The Army today an-  
nounced the development of an  
"electronic weatherman." The  
system spots high-altitude indi-  
cations of approaching storms,  
hurricanes, tornadoes and other  
bad weather faster and more  
accurately than any previous  
device.

It is the first system able to  
chart high velocity winds like  
the jet stream on a routine  
basis, the Army said.

The new system, developed at  
the Army signal engineering  
laboratories here, reduces long,  
difficult calculations now re-  
quired to interpret data from a  
weather balloon flight. It tracks  
the balloon and a built-in elec-  
tronic "brain" does the figuring  
instantly.

Knowledge of the shifting  
winds of the upper atmosphere  
is vital in battle for accurately  
aiming long-range artillery and  
missiles. Civilian defense and  
military leaders also need such  
wind data to predict the direc-  
tion in which clouds of radio-

active dust may drift after a  
nuclear blast.

The specially designed com-  
puters of the system work in  
conjunction with a three-pound  
weather station, known as a  
Radiosonde, which is carried  
aloft by a rising balloon. The  
tiny airborne device sends back  
coded radio signals, which are  
fed into the "brain." They are  
processed and stamped out on  
paper as usable humidity, tem-  
perature and pressure readings.  
A second high-speed computer  
calculates winds faster than has  
been possible before.

The weather "wizard" can  
track a balloon to an altitude  
of twenty-four miles or higher  
with its radar-like antenna,  
which follows on the balloon's  
radio signal automatically. It  
tracks the balloon precisely even  
if it drifts 200 miles from the  
launching site, or twice the ef-  
fective range of previous equip-  
ment.

For tactical operations the  
set can be carried in a van, and  
can be assembled for operation  
in three hours.

# SEEKING ETERNAL TRUTHS IN A WORLD OF CHAOS

The Institute for Advanced Study at Princeton, founded a decade ago, frees scholars to pursue their pioneering.

By ELEANOR KITTREDGE

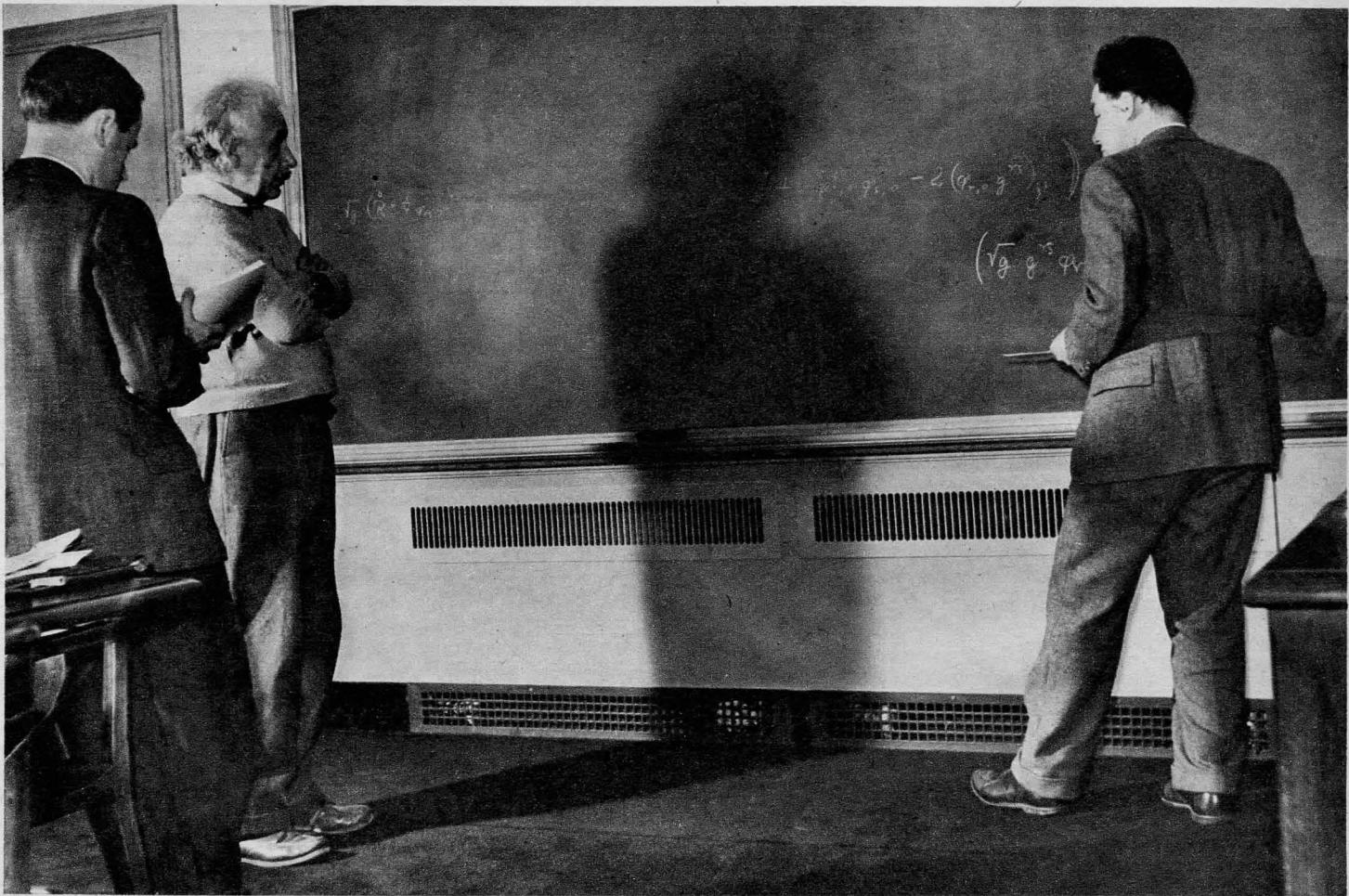
"**M**Y life here has been one of stirring adventure, and I have just time for one more adventure in the same cause." With these words Frank Aydelotte bade farewell in 1939 to students of Swarthmore College, where he had been president for nearly twenty years, and embarked upon his new role as director of the Institute for Advanced Study at Princeton.

Recently in his library in the old house in which he lives outside Princeton Dr. Aydelotte said to the writer with a smile, "We are really doing the same thing here, you and I—trying to find out what the institute is and what it may become."

The first time you see Frank Aydelotte or hear him speak you receive an impression of extraordinary moral integrity. When you hear that it was a week after he left Swarthmore that he became a member of the Society of Friends, the story becomes one of those anecdotes which light up and explain a good deal of the quality of mind and character of a man. He had waited until he had broken his official connection with the old college of the Quakers before publicly joining their ranks.

Frank Aydelotte is austere and friendly at the same time, open-minded, ready to listen to the suggestions and ideas of any colleagues or students, yet he is inflexibly rooted in his own philosophy of the meaning and purpose of education. He has a passion for excellence, and his life has been spent in trying to release the superior gifts of mind and character in the persons of his associates. He has pursued this vision of excellence with the intrepidity and unflagging energy with which physical explorers climb Everest or map the uncharted regions of Tibet or the Pamirs.

When he talks about education and the



Where "class" and "faculty" are all students—An informal Institute research group led by Professor Einstein.

unknown, waiting to be discovered by the "lonely grappling" of honorable minds with intellectual problems, he makes a little of his own vision real to the most obtuse. The search, the splendor of the search for knowledge and its use for human purposes becomes of vital contemporary importance and he makes the scholar's life appear not a life of aloof escapism but a life of rigorous pioneering activity.

One comes away from a few days at the institute at Princeton at this present moment of chaos and crumbling of standards of value, aware that one has been

among a group of people dedicated to judging time by eternity, to living by what they regard as the fundamental and the permanent in the midst of change and chance and distilling meaning from mere happenings.

**D**R. AYDELOTTE gave me a book to read. It was the volume published for the 400th anniversary of the College de France. In this history, given to explain a little of the spiritual parentage of the institute, I found underlined by Dr. Aydelotte himself this quotation, "Their

methods of teaching were varied. All or nearly all were truly initiators as well as scholars. \* \* \* Alone among the various corps of teaching bodies in the next century the College de France counted in the movement of sciences, arts and ideas."

It was in 1530 that a small group of humanists in the wake of Erasmus persuaded a French King, François I, to establish a new institution which became the College de France. All Souls College at Oxford had been founded a century earlier. Both centers grew great in their time because they had left men's minds free.

The institute at Princeton, founded ten years ago, had the same objective. Dr. Abraham Flexner, its originator and first director, had long been a critic of the acceptance of the norm of mediocrity in educational procedures. Early in the Nineteen Twenties Dr. Flexner had written a memorandum pointing out that the German universities were losing ground and that American graduate schools, while improving, were being increasingly hampered by the size of their student bodies. In 1928 at Oxford he had given a series of lectures in which he analyzed critically methods of higher education and outlined in a brief passage the kind of institute of higher studies which he believed American scholarship most needed.

**T**HESE criticisms and suggestions came to the attention of Louis Bamberger and his sister, Mrs. Felix Fuld. Their imaginative insight led them to grasp the possibilities such a center of learning might hold for America and inspired them to make possible its creation and endowment. Dr. Flexner tells with humor of the effect of being permitted, so unexpectedly, to realize in concrete form what had been, in his mind, almost the blueprint of a dream. He speaks also, with deep appreciation, of "the fine spirit in which Princeton University cooperated from the beginning with the new institute."

As successor to Dr. Flexner, who retired last year, Dr. Aydelotte was peculiarly fitted by his own educational exploring to carry on the direction of an experimental research institute. A Rhodes scholar from Indiana, honorary fellow of Brasenose College at Oxford, secretary for more than twenty (*Continued on Page 16*)



Dedicated to the higher scholarship—Fuld Hall, home of the Institute for Advanced Study at Princeton.

Photos © L. Aigner

## SEEKING ETERNAL TRUTHS IN A WORLD OF CHAOS

(Continued from Page 5)  
years to the Rhodes Trustees in America, at Swarthmore Dr. Aydelotte had inaugurated a system of working for honors, of teaching subjects for content rather than courses for credits, to

such of the undergraduates as were ready to accept a stiffer intellectual discipline.

He quotes de Tocqueville, who, conceding that the American democratic procedure of education for all or nearly all would raise the average level of education in this country higher than the average level anywhere else, doubted whether the system could produce the rare excellence at the top upon which any real advancement depends. Dr. Aydelotte says, "Democracy cannot afford this handicap. No democracy can afford in the long run to sacrifice height for breadth. We are wastefully allowing the capacity of the average to prevent us from bringing the best to the standards they could reach. The method of doing it seems clear: to separate those students who are really interested in the intellectual life from those who are not. I believe, of course, that intellectual curiosity is just as fundamental a characteristic of the human race as the desire for political power or wealth. In fact, I think it is a more enduring appetite than the appetite for power or riches. It is certainly an American characteristic."

FROM beneath the towering elms which have sheltered his old house (it was begun in 1696) for half a dozen generations, Dr. Aydelotte looks across open meadows toward the new institute building, Fuld Hall, completed only last year, where the seventeen research professors and the fifty-odd members of the institute carry on their work.

The institute began with a school of mathematics, since there appeared to be more agreement on the men for a new mathematics school than for any other. A short time later a school of economics and politics was added and later still a school of the humanities. The "students" seem in some odd way to be all the people connected with the institute from Dr. Albert Einstein on down. The faculty members work as the College de France history said that the early members of that body worked. Some of them hold seminars, some of them lecture, some of them work in more intimate relation with a very small group of members. No degrees are awarded and there is no tuition fee.

The faculty are a permanent nucleus. The members come for a period of one or two years. They may be fairly young scholars who have already taken their doctorates, or they may be professors from other institutions, released for a sabbatical year from the preoccupations of teaching to renew their contacts with the latest research activity in their various fields. Occasionally people like Niels Bohr of Copenhagen, G. H. Hardy and Paul Dirac of Cambridge, England, and Harald Bohr have come for a season to work, as one of the mathematicians put it, "as students, since here we are all students."

Since there are no dogmatic rules hampering the future, new schools may be added and earlier schools dropped as emphasis shifts and individuals pass. There is no routine and little formal organization except such as the individuals themselves decree. The

faculty members are chosen with as much skill as the trustees and director have at their command and then are turned loose to do what they think best.

If they want to lecture, they do so. If they want to arrange small seminars, they do so. If they want to shut themselves inside their own four walls and work independent of people or time or place, they do so.

HERE is no emphasis here on publication or hasty generalization or short-cut solutions. It is a setting definitely designed to provide a place of advanced study. It may be work on something of immediate and obvious significance, such as a seminar on American military policy, or it may be some of the mathematicians' very concrete contributions to national defense; on the other hand, it may be work as seemingly remote from contemporary affairs as the preparation for publication of early Latin texts on which one of the humanists is busy.

But whatever the activity, all the members of the faculty with whom the writer had an opportunity to talk gave the same impression of their sense of the privileges and the obligations of scholarship.

It was a rainy morning when I spoke with Dr. Einstein, for instance. Dr. Einstein had just come in, an umbrella over his arm, his rubbers on his shoes, from his walk to the institute. His fine head and his soft voice seemed enveloped in a kind of moist Princetonian mist. He looked faintly surprised at being questioned but very benevolently and gently amused. He spoke deprecatingly, as if returning with difficulty to a mundane world, and said, "What I have done personally is much exaggerated. What is really beautiful is science! It is a great gift if one is permitted to work in science"—here he paused for a second and then went on, spacing out his words—"to work in science for his whole life."

As an indication of Dr. Einstein's conception of his own personality, when he was asked what he thought he would have done with his life had he been born in the year 1400, before science in its modern sense existed, he replied without hesitation, "But, of course, I would have been an artist."

At the institute Dr. Einstein continues his researches in mathematical physics; sometimes he

publishes a paper or gives a lecture. A very few students, some of whom have traveled a long way to be with him, work under his direction. But watching him, listening to him talk, seeing him sitting in the upstairs study of his present home, a small white Princeton house with great trees outside the window in his back garden, one has an almost tangible physical sensation of being in touch with the unknown and the illimitable.

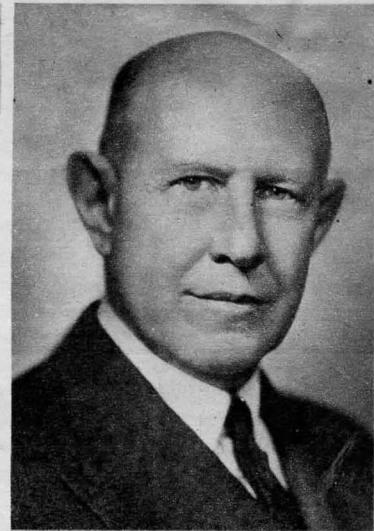
I remember seeing his study once on a snowy day. The trees outside the great wide window of his study were dark and bare against the white background. On his work table, in front of the window, were numerous small sheets of paper with Einsteinian formulae traced with amazing delicacy on the white surfaces. They had an esthetic significance of their own as symbols of human thought at its most abstract and most disinterested, and while I looked at the mysterious patterns of calligraphy Dr. Einstein spoke, with gentleness and with absolutely no trace of bitterness, of the ignorant who persecuted knowledge. Interstellar space seemed to be caught on his mysterious white papers, and the incredible and almost compassionate tolerance of the genuinely superior mind seemed to be caught in the words he was using.

His colleagues, almost all of whom seem to be much nearer to the ordinary rough and tumble of everyday life, speak of him with profound respect as if Dr. Einstein's spirit were in some way a moral blessing to the institute and as if intolerance had presented America with an amazing gift.

THE institute this Winter has a new role as one of the hosts to the Economic and Financial Department of the League of Nations. Institutions as well as men may become refugees today, and, in order to preserve the continuity of the work formerly done at Geneva by Alexander Loveday and his staff, both personnel and records were removed to Princeton for "such period as may prove to be desirable," as the formal invitation read.

One of the stories going around Princeton at the moment is the description of Mr. Loveday's first meeting on American soil with his small economics discussion club. After a hazardous trip across Southern France at the end of August, a serious motor accident, a period of tense waiting at Lisbon for permission and transportation across the Atlantic, certain members of the circle were reunited at Princeton, and at the opening session of the discussion group, as if absolutely nothing untoward had occurred, Mr. Loveday as the presiding officer opened his meeting with the terse words: "We shall hear the minutes of the last meeting."

The irrelevant accidents of personal adventure in a precarious world are not allowed to interfere with the pursuit of knowledge so long as these scholars can help it. One of the mathematicians said to the writer in trying to explain the institute, "Modern industry and modern warfare involve all possible applications of science. All six of



© Bachrach

Director—Dr. Frank Aydelotte.

us here, working in mathematics, have been called in directly or indirectly by Washington. With respect to civilization as a whole, mathematics plays the role or is one of the services of supply! But the thing I should like you to understand about our work here is that even if one of us should make the main concrete contribution to national defense in solving some problem of ballistics or aeronautics, we should regard it as a digression from our main purpose, which is the development of the fields of knowledge in which we are proficient.

"Along with the main stream of creative human activity you have these necessary annoyances like Hitler which have to be dealt with—a blow struck in self-defense and in defense of the social structure of which mathematicians are a part. But you can't fight Hitler with guns only. You've got to have a moral idea: the respect for intelligence, for reason, for the man who is free to think and what he produces, irrespective of the immediate usefulness of the content of his thought. What men respect determines the way they go. We believe that here we are embodying that respect for science; that there is a stream of knowledge of which we are the vehicles and that the function of the institute is an essentially spiritual venture of faith, of belief in the methods of science and reason and their usefulness to the future of civilization."

ONE of the economists—one who has been frequently called in as a technical adviser to the Treasury—also sees the institute as a place where a few people, whatever the pressure of their day-to-day activity as citizens, must take the long view of human processes and of economics as a science of human behavior.

"I don't mind this place being called an ivory tower," he said. "I think we are here for a very severe examination of premises. One thing I am most interested in is the way all the social studies have been broken up into fragmentary sciences since they were taught forty years ago as 'moral philosophy.' I want to make a kind of five-foot shelf of all the textbooks on politics, history, economics, sociology, as they are taught today to American university undergraduates and to see the content to which the young mind is actually exposed."

"In economics we must be able to state our problems before we can hope for any fresh synthesis. I want us to have much more

(Continued on Page 17)



Nation-Wide News Service  
Founder—Dr. Abraham Flexner.

## SEEKING

## TRUTHS

*(Continued from Page 16)*

knowledge, quantitatively, of the range of change, to know more about such things as how the pre-1914 system arose and functioned, and what the materials actually are of which the world is built."

In another wing of the institute the writer was taken to see a library of "squeezes." The squeezes are records made by pounding filter paper with a camel's hair brush upon stone inscriptions, the collection at the institute being records from excavations in the Agora in Athens.

"In the old days," my informant said, "the Germans used to write four-volume studies of epigraphy without ever having had a stone inscription in their hands or having seen anything but written and sometimes faulty copies of the original texts. By this method of squeezes we preserve the actual record as it exists in stone, and there is here, in deciphering and studying, material for work during my lifetime and the lifetime of all the people I can train to carry it on. For our history of Greece we depend on these inscriptions, since for the third and second century B. C. there are no consecutive accounts extant."

**T**HEN he gave me one squeeze to hold in my hands while he showed me the text as he was deciphering and translating it. I discovered that the squeeze recorded a decree of the year 320 B. C. For centuries the stone had been buried, lost to light after some sack of the city, then excavated by Americans, sons from a continent unknown when the stone inscription was made, yet the text when deciphered became as relevant as the morning's newspaper: "Be it resolved by the council and the people"—Athenian democracy, speaking across more than 2,200 years.

At the institute one got the impression that America, whatever role she may be called upon to play in the present war, is at the moment the repository of the lore of time, not merely for herself but for the whole of the race. These are the methods by which men before us have kept "the lamp tended and alight," as one of the paleographers said to me.

Dr. Aydelotte has an acute appreciation of this phase of America's responsibility, and in forthright terms he states it. Recently in a speech on "Isolation versus Peace" he said: "The one thing that seems to me clear is that democratic civilization must either build upon the foundations of the past a stronger and a greater future or must end altogether. \* \* \* The interval between two world wars—these have been years which the citizens of this country have passed in the vain effort to isolate themselves from the troubles of this world. The American people often seem to me to make neutrality an excuse for refusing to think. \* \* \* A democracy which refuses to face reality is in serious danger. It will be good for our souls to recognize that fact."

In private conversation Dr. Aydelotte phrases it even more succinctly when he says: "I do not believe you can be neutral between right and wrong."

## MAKING WEATHER TO ORDER

*Continued from page five*

surrounding mass movements and scared to death of high-pressure areas. Cape Verde hurricanes (off the west coast of Africa) usually start west in the trough of the doldrums belt and then turn north, skirting the prevailing high-pressure area — somewhere in the Caribbean.

With the help of the super-calculator, weathermen could predict the path of a hurricane with great precision. If its projected path led overland, across Florida, the meteorological high command would prepare for battle.

Their strategy would be to pick a favorable time and place over the ocean, then funnel the high-pressure system through a sluiceway of "convection points," or columns of rising air, in order to deploy friendly winds against the hurricane and blow it out to sea.

### Relief for Florida

BURNING oil, spread by planes over sea areas in predetermined patterns, is one plausible method of setting up the warm-air columns. Once the super-calculator is completed, this and other methods can be tested in the laboratory. Before long, Florida residents may be able to relax during hurricane season, confident that an aeronautical "weather command" will repel any tropical invaders at sea.

The other alternative is to puncture the incipient storm center before it has a chance to reach hurricane proportions. This calls for grandmother's beads-in-the-kettle technique. The idea is to break up the homogeneous surface of the sea. Theoretically, the checkerboarding of the ocean surface in the hurricane regions with dye or oil patches of different reflective properties might accomplish this.

Marine growths which would float on the surface in great patches should also break up the super-charging of the atmosphere. So might deflection of colder ocean currents through the evenly warmed waters of the doldrum area. Another possible means of short-circuiting the hurricane's storage battery is "triggering" by means of a fine, highly absorbent dust let loose in the upper atmosphere.

When you start in housebreaking hurricanes, you have to know exactly what you're doing. Most actual ex-

perimentation along these lines will have to wait on the super-calculator to determine when and where to take control measures to obtain the desired effect with the least effort. That results can be obtained, there is no doubt whatever.

Man has been exerting control



**TODAY'S weatherman**  
is an electronics expert

over certain phases of the weather for many years — without bothering to find out why or how.

In Florida, for instance, the burning off of large patches of jungle grass in hot, sticky weather is often followed by local thunderstorms over the burned-out area. The same thing happens when farmers fire the prairie grass on the plateaus of South Africa. Meteorologists explain that the rising columns of hot air trigger the release of latent energy stored in stationary masses of warm, moist air. The dropping of carbon black over a large area of ground would probably have the same result.

### Planting Rain

ANY treatment which alters the absorption or radiation properties of the earth's surface or the atmosphere at various levels will have its effect on the weather. The new electronic computing techniques will take the guesswork out of reforestation and enable conservationists to plot the exact areas to be planted to reduce rainfall over wet areas and increase it over others.

Cities, too, affect the weather, though there's not much that weather-control men will be able to do about that. The haze cap over

most cities makes them warmer than the surrounding countryside. Fine particles of soot and smoke promote fogs and the rising heated air helps set off thunderstorms.

Incidentally, both together are responsible for a change in the London fogs that would have interested Sherlock Holmes. Increased heating facilities have lifted the usual fog blanket several feet over London's highest rooftops. During the wartime fuel shortage, they sank once more to street level. Now they're rising again as Londoners get more fuel to burn. Very probably London, like most great cities, would have no fogs at all if it used smokeless fuel—or precipitants.

But there are times when fogs are desirable, as over unharvested fields and orchards when there is danger of frost. The burning of smudge pots is cumbersome and inefficient, and one of the many practical challenges to weather control is the need for a better way of producing fog blankets over field and orchard, or, conversely, of dispelling fog at will.

### The Fog Problem

THE vapor trails produced by airplanes at high altitudes suggest that moisture distillation at lower altitudes may be "triggered" by inducing turbulence in the air — possibly through sound waves. Another possibility is the release of dust bombs — with finely divided particles electrically charged to produce fog or disperse it.

During the war, the beginnings of fog dispersal were made on English air fields where burning gasoline evaporated the moisture in the air. The cost of this operation alone — some 6,000 gallons of gasoline per landing for 2,500 planes — would more than finance the launching of the whole program of world-wide weather control envisaged by Dr. Zworykin and his colleagues.

The eventual goal of weather control, as Dr. Zworykin conceives it, is "an international organization to channel the world's weather, as far as possible, in such a way as to minimize damage from catastrophic disturbances and improve climatic conditions."

Few ventures would demonstrate more clearly the scientists' concept of "one world." *The End*

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NEWS

FEB 22 1947

## MAKING WEATHER TO ORDER

by John Kord Lagemann



IT'S GOTTEN to the point where the weathermen have decided the only way to predict the weather is to make it themselves. That's exactly what some of our leading scientists are now getting ready to do on a global basis. The effect on human life in the next decade is likely to be startling.

Dr. Vincent J. Schaefer, the General Electric scientist who touched off a snowfall a few months ago by dusting a cloud with dry ice pellets thrown from a plane, showed that we can do more than just talk about the weather these days. His feat represents only one of many ways by which scientists hope to "trigger" the weather — give it just the push required to make it behave the way we want it to.

This is not the old chestnut about diverting the Gulf Stream, or piping the Mediterranean into the Sahara. Nor does it involve melting the icecap with atomic heaters or any such strenuous or perilous adventures. The new weather-control movement seems only to find out what the weather is going to do anyway — and then have its say about the time and place. The effort is more modest, but the effect no less spectacular.

Dr. V. K. Zworykin, top-ranking electronic researcher for the Radio Corporation of America, Dr. John Von Neumann, of the Princeton Institute of Advanced Study, and Dr. A. F. Spilhaus, of New York University, worked on a secret weather-control program late in the war. Their joint report, just taken off the secret list, revolves about, of all things, a calculating machine! This is now under construction in RCA laboratories.

What has a calculating machine to do with the weather? To weathermen, that's like asking a doctor how an X-ray machine helps him treat broken bones, or a farmer how a better tractor can grow more corn.

New detection devices, like radar, radiosonde and controlled rockets, have put the weatherman in the position of a chess player who has to play not just one but a dozen games all at the

same time. The growth of a world network of weather stations, about to be augmented with automatic radio senders in jungle, desert and icecap, has swamped the weatherman with more data than he can analyze within the time it is of any use to him.

Given all the factors involved in the weather at a certain time, the meteorologist, like the chess player, should be able to tell you exactly what is going to happen any place on the board for days and even months in advance. After all, the weather is merely a pattern of known forces interacting according to known principles.

### "Super-calculator": Miracle Machine

THE big trouble is that no human brain can grasp the whole pattern of interacting forces — much less plot its complicated evolution rapidly enough to keep up with it.

Here's where the new "super-calculator" comes to the rescue. This, as you have probably gathered, is no ordinary adding machine. The most complex calculator now in existence can solve problems running into 12 stages. The "super-calculator" will take problems into 400 stages!

When the various instrument sections are finally assembled, the new machine, a miracle of compactness, will fill a good-sized room. Entirely electronic in operation, it will contain about 2,000 tubes of various shapes and sizes. One of these, now being tested, resembles a half-scale glass model of the

human cortex (the outer covering of the brain). This is the machine's "memory," with a capacity of 4,000 problems, any one of which would keep a mere human brain at work for months or years.

At the will of the operator, the tube recalls and applies to new equations any required combination of the "remembered" problems — at any stage of their solution. By turning a dial, the operator can drop the tube's "memories" back into a kind of electronic subconscious — or he can make the tube "forget" them entirely.

The weather waits for no man, and anybody expecting to predict and control it has to work fast. The new calculator is designed to perform a multiplication in 11 millionths of a second. A single minute will suffice for solving 100,000 separate equations. If an operator, feeding in problems on perforated tape, has made a mistake, the machine will tactfully ring a bell!

The first machine will be ready in 1948, and it's going to cost over a million dollars. Dr. Zworykin estimates the world will need a hundred of them to figure out the weather on a global basis. The saving to a single industry like farming, shipping, or aviation would repay the cost many times. Partly because of faulty warning, the 1938 hurricane cost \$500,000,000 and 500 lives.

But by far the more exciting aspect of the machine is its

possible contribution to weather control. The driving force of the huge power plant we call the weather all comes from the sun in the form of ultra-shortwave radiation — far shorter than the bands picked up by your receiver but otherwise identical with radio waves. Because they are so short, most of the direct solar radiation goes right through the atmosphere without heating it.

Like a receiving station, the earth absorbs this energy and transmits it back to the atmosphere in the form of heat. Having a far greater wave length than sunlight, much of this heat is trapped by the atmosphere and stored up in the water vapor of clouds. Because some parts of the earth's surface transmit back far more heat than other parts, the distribution of energy in the atmosphere is uneven — and "weather" is simply the way this energy seeks an equilibrium.

These forces are not to be trifled with. Day in and day out, the earth receives some 127 trillion horsepower in solar radiation, and though this is only a dribble of the sun's energy output, it's more than enough, even in this atomic age, to discourage us from trying to meet force with force.

Instead, the weatherman is developing a form of scientific jujitsu which turns the weather's vastly superior force to his own purposes.

#### Upsetting Nature's Balance

IF YOU'VE ever watched children pile up blocks on the nursery floor, you'll understand the principle. Like the blocks, the towering accumulations of energy in the atmosphere are held in delicate balance; the slightest breath, properly applied, will bring them tumbling down.

The snowfall set off by Dr. Schaefer illustrates the small amount of force required to trip nature's mysterious balance. For some unknown reason the water droplets in clouds remain liquid even in temperatures far below freezing. Nature's own "triggering" agent is still unknown. Dr. Schaefer simply discovered that pellets of dry ice, falling through super-cooled water vapor, would do the trick. When Dr. Schaefer and his associates find out *why* this happens, we may be able to advance or delay precipitation, help nature parcel it out more fairly.

Like love, the weather is always easier to encourage than restrain. West winds, which pass innocently over St. Paul and Milwaukee, pick up warmth and moisture from the Great Lakes and dump it ruthlessly as snow on Buffalo and Oswego — as much as 60 inches in the single storm of December, 1945. "Triggering" over the lakes might prove far less expensive than digging out a city of 600,000 two or three times every year.

Will it be possible to stall off rain clouds west of the Sierras and make them hold some of their moisture in reserve for Nevada, Arizona and New Mexico? The weatherman answers with the wartime slogan: "... the impossible takes a little longer." By forcing air masses upward, mountains squeeze out most of the moisture content. But if you live on the wrong side of a mountain range — generally the east side so far as water supply is concerned — don't give up hope. Science is learning more and more about Nature's strange frustrations.

#### He Uses an Old Trick

OUR grandmothers' trick of using beads or pebbles to make the kettle boil is based on one principle the weatherman may soon employ to manipulate hurricanes and thunderstorms. Water "ought to" boil at 212° Fahrenheit at sea level. But it doesn't always do that. Grandmother's beads "triggered" the boiling process by breaking up the even distribution of heat on the bottom of the kettle. If you heat water in a perfectly smooth container — say one coated with mercury — the water, for some unexplained reason, stores up the heat instead of releasing it. So great is the energy it can store up by "super-heating" that when boiling finally occurs it does so with the violence of an explosion.

That, on a far grander scale, is essentially what happens in the doldrum belt near the equator — the source of most tropical hurricanes. Steady evaporation over a large sea area stores up a tremendous reservoir of energy. Instead of coming, so to speak, to a quick boil, and dissipating its energy in local squalls, the incipient hurricane continues to store up more and more energy — until a relatively slight disturbance in the surrounding area is sufficient to release its pent-up fury.

What can be done about hurricanes? Dr. Zworykin sees two courses open to the weather-control scientist. The first is to deflect its path. "In spite of the tremendous energy involved in the rotary motions," he explains, "the linear motion of the storm center is slow and apparently easily influenced by prevailing winds."

A hurricane, to oversimplify a complex meteorological observation, is a kind of bully, having very little effect on

*Continued on page 20*



GLOBAL WEATHERMAN: Dr. Zworykin and a piece from the world's mightiest calculating machine, now under construction

THE NEW YORK TIMES, MO

## NIAL OPENS ROOSEVELT

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of Ex-President in  
ster Bay, L. I.

al to The New York Times.

ER BAY, L. I., Oct. 27—Opening of the Theodore Roosevelt Centennial Year was held today at the former president's grave. Several hundred persons gathered at the memorial cemetery overlooking the harbor. Twenty-sixth President was born in New York City on Oct. 27. He died at Sagamore Hill home in Oyster Bay, N. Y., 1919.

Deaths were placed on the by the Fleet Reserve Association, Northeast Region, for the last thirty years made an annual pilgrimage to the shrine. Col. John T. Ett of First Army Headquarters presented a wreath in honor of President Eisenhower. His floral decoration was laid on the grave by Comdr. D. E. Fiore, representing Admiral Milton E. Miles, Commandant of the Third Naval District.

J. Williams of Brooklyn, president of the Reserve Association and today's chairman, read a letter from Vice President Richard M. Nixon. A. Hawley of Brooklyn, aviation chaplain, extolled former President's life, particularly citing his belief in a strong and efficient Navy.

### Ceremonies in City

Theodore Roosevelt-Navy League, Inc., held its anniversary of the birthday of Theodore Roosevelt yesterday afternoon. The group met at the equestrian statue of the president in front of the Museum of Natural History, Twenty-ninth Street and Park West.

At the ceremonies, Fairchild, president. Tributes to him were paid by the United States Casimir American Legion S. General

## Meyner Scores G.O.P. in Jersey; V Forbes Bids for Negroes' Votes

WEST CALDWELL, N. J., Oct. 27 (AP)—Gov. Robert B. Meyner took a leisurely tour through metropolitan North Jersey today, touching only briefly on politics as he attended several church and social gatherings.

His only direct political statement was before a rally here, where he told an Essex County Democratic gathering:

"The only way the people of New Jersey will get new license plates will be if they elect me and a Democratic Legislature."

Governor Meyner accused his Republican opponent, State Senator Malcolm S. Forbes, of having complicated the state license situation at a cost of more than \$1,000,000 to the taxpayers.

Riding with his wife, Helen, in his State Police-driven car, the Governor earlier attended a testimonial for three Negro women leaders in Newark, a mortgage burning by an Italian family society in Paterson and the dedication of a new Roman Catholic War Veterans building in Carteret.

NEWARK, Oct. 27 (AP)—State Senator Malcolm S. Forbes, Republican candidate for Governor, said today that "I don't think any Negro can afford not to show support" for President Eisenhower and the Republican party.

Mr. Forbes told Negro audiences that a vote for him and other Republican candidates in New Jersey's general election on Nov. 5 was "the only way you can tell the President that he did right."

The Senator said politicians throughout the nation would be watching the election to see if there was support for General Eisenhower's action in sending Federal troops to enforce desegregation in the Central High School at Little Rock, Ark.

Remarking again and again on what he called "the unadulterated courage of nine Negro children walking into a sea of hate," Mr. Forbes added: "You don't have to go against bayonets, you just have to put an X in front of a box. Is that much to ask?"

## 5 BILLION FOR RESEARCH

Science Foundation Reports on 1953-54 Spending

Special to The New York Times.

WASHINGTON, Oct. 27—How much is spent in the United States on scientific research and development? Figures made public in the report of the National Science Foundation today showed that it amounted to \$5,370,000,000 in a twelve-month period in 1953-54.

Of this total, \$435,000,000—about 8 per cent—went into basic research. The rest went into applied research—that aimed at developing new products, medicines and weapons.

The Federal Government supported 52 per cent of the total research and development spending, with most of it for military purposes.

The total comprised the spending of industry in the calendar year of 1953, of colleges and universities in the academic year of 1953-54 and of the Government in its fiscal year ended June 30, 1954.

**California Dog Triumphs**  
STOCKTON, Calif., Oct. 27 (AP)—Bobo Graenbruch Beckum, owned by Dr. William J. Schimmel of Atwater, Calif., won the national championship today in German short-haired pointer field trials.

# Excerpts From Science Foundation's Report to the President on Basic Research

Special to The New York Times.

**WASHINGTON, Oct. 27—**Following are excerpts from a report by the National Science Foundation to President Eisenhower on "Basic Research—A National Resource":

## BASIC RESEARCH

Science has played an important role in the rise of the United States from frontier land to world power. Indeed, the growth of our scientific effort parallels the growth of our strength as a nation. The physical means to conquer wilderness, control natural forces, increase the length and, hopefully, the enjoyment of life, achieve national security—these things have come largely from ideas which observation, measurement, and other laboratory arts have developed into useful methods and machines at home and abroad.

Our confidence in the future rests in no small measure on prospects for the continued and accelerated advancement of science. Recognizing this fact, the Congress in 1950 established the National Science Foundation. Among other things, the foundation is directed "to develop a national policy for the promotion of basic research and education in the sciences."

This report is one step toward that end. Its major emphasis is on basic research—an expression of man's desire, his need to learn and explore—and, quite incidentally from one standpoint, the source of all technological progress. As a continuing search for new knowledge, basic research has certain characteristics which help us distinguish it from other forms of scientific activity. The search is systematic, but without direction save that which the investigator himself gives it to meet the challenge of the unknown. He is strictly on his own, guided primarily by his interest in learning more about the workings of nature.

Generally speaking, the report shows that support for basic research, particularly Federal and industrial support, has increased appreciably during the past decade. But the increase is still not enough to keep pace with the nation's requirements. The need for more support and more favorable conditions of work is particularly acute in colleges and universities which represent our greatest source of new scientific knowledge and our only source of trained research workers. Since these centers of higher education conduct so large a part of our basic research and train practically all our scientists, their situation is a matter for serious concern.

His work may be contrasted with that of scientists and engineers conducting applied research (laboratory studies concerning the practical use of newly found knowledge) or development, which takes applied research out of the laboratory and translates it into production. In applied research and development an unexpected problem is essentially a negative thing. It represents a source of delays, an obstacle to be overcome, preferably in the not-too-distant future. Work proceeds under pressure to solve or circumvent the problem as quickly as possible because it interferes with the attainment of practical goals. Knowledge of the most fundamental sort may be needed and sought, but, as one engineer has put it, "not too much knowledge." Ideally, one would acquire only sufficient knowledge to solve the problem at hand, although the stopping point may not be easy to determine. But the practical goal and the time element are always there.

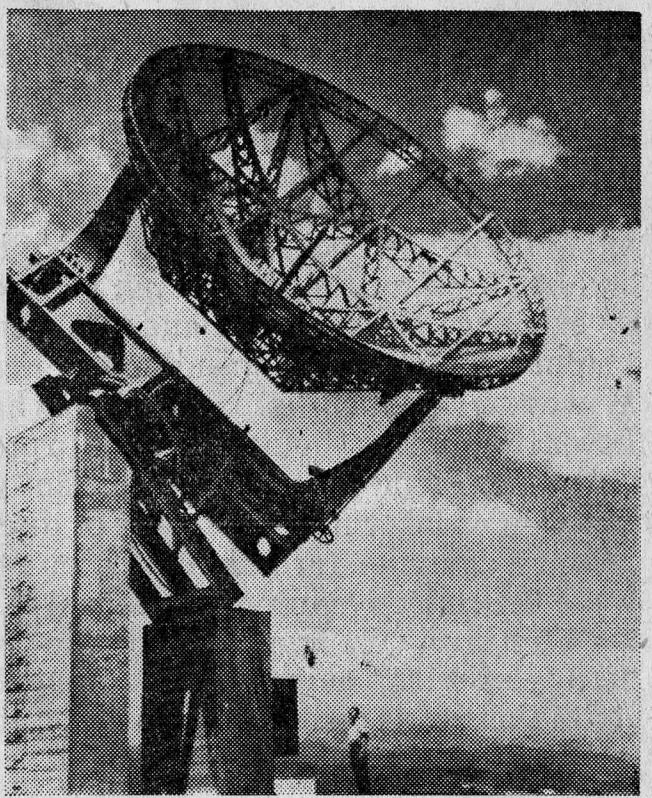
## STEPS TO BE TAKEN —IN BRIEF

Two main objectives have guided the foundation in considering what steps may be taken toward improving our national effort in basic research.

The first is to establish conditions more favorable to the continued growth of basic research.

The second is to achieve a greater flow of funds for basic research.

Both bear so importantly on the economy and security of the



Associated Press  
**THE RADIO TELESCOPE** is one of the tools of a new branch of science, radio astronomy, which was cited by the National Science Foundation in its report on the importance of basic research. Instrument tracks the sun.

to investigators working on Operation Sherwood, the Atomic Energy Commission project to control thermonuclear or "hydrogen bomb" reactions for peacetime power uses. For example, certain radio sources are so far away that they must be transmitted at power levels as high as  $10^{36}$  watts (1 followed by 36 zeros). It is not yet known how nature produces such enormous energies, but evidence suggests that the mechanism may involve the effects of interstellar electromagnetic fields on atomic particles. If engineers could apply similar effects, even on a small-scale basis, thermonuclear power might be more than an intriguing possibility.

## Virus Heredity

Some viruses destroy certain harmless strains of bacteria. Magnified tens of thousands of times under the electron microscope, they are seen to be tadpole-shaped bodies with oval heads and slender tails. In attacking, such a virus uses a tail-first assault. It backs into a bacterium, using its tail to penetrate the outer coating, and then acts as a living hypodermic needle.

Material originally

concentrated in the head of the virus passes down through the tail, a hollow tube less than a millionth of an inch in diameter, and into the bacterial cell.

Twenty minutes or so later the cell bursts, yielding about a hundred duplicates or near-duplicates of the original virus.

Intensive studies of the behavior and chemistry of viruses, things so small that millions would fit comfortably on a pinhead, are little more than ten years old. Yet already this research is considered one of the most promising approaches to an understanding of disease, heredity, and the basic processes of life. Work is being conducted at many American institutions, including the University of California, the California Institute of Technology, Purdue University, the Rockefeller Institute for Medical Research, and Indiana University.

Examples of studies currently under way may illustrate some of these points. The following paragraphs present some of the most active and promising areas of basic research, areas which may be expected to yield important new knowledge within the next decade or so. It should be emphasized that the selection is somewhat arbitrary. The list of such areas is a long one, and other examples could have been chosen with equal validity. But a few concrete examples of basic research and its implications may be more helpful than attempted definitions and general statements.

## Radio Astronomy

About twenty-five years ago a radio engineer, Karl Jansky, began a study of unidentified sources of static. There was nothing abstract about the study; it was undertaken for very practical reasons. Jansky was working at the Holmdel, N. J., station of the Bell Telephone Laboratories and had built an aerial to detect the static interfering with transatlantic radio-telephone messages. He soon noted a peculiar type of noise: "Very weak \*\*\*

processed by the machine and the "transformed variables" delivered in usable form. Difficult as this appears, there is already good reason to expect success, and studies of the involved problems are going on at several institutions.

The progress in such efforts that had already begun to appear several years ago was somewhat dramatically shown at a special demonstration in New York, where a series of punched cards was fed into an electronic machine. The positions of holes in the cards represented coded information for the following Russian sentence, as transliterated for the machine: "Myezhdunardonnoye ponyimaniye yavlyayetsya vazhnym faktorom v ryeshyenyi politychieskyix voprosov."

In about nine seconds an automatic typewriter connected to the machine typed out a translation: "International understanding constitutes an important factor in decision of political questions."

The machine was a large, high-speed computer of a type originally designed to solve mathematical equations. In this case, however, the machine's "memory" devices contained words instead of numbers, a simple Russian-English dictionary of 250 words. The demonstration was arranged by linguists, mathematicians, physicists, and engineers of Georgetown University and International Business Machines Corporation, and featured the translation of a number of other short Russian sentences.

Much work has been done in this field at the above institutions, as well as the Massachusetts Institute of Technology, Harvard University, the University of Washington, the University of California at Los Angeles, the Institute for Advanced Study in Princeton, and other American and foreign laboratories. Languages being studied for translation into English include (besides Russian) German, Spanish, Chinese, and Japanese.

Extremely compact magnetic devices, themselves the outcome of basic research in magnetism and the physics of crystal structure, have been designed for storing information. They make it possible to build memory units which hold larger vocabularies in a smaller space. Advances have also been reported in the study of two difficult problems, among others:

1. How can machines be instructed to change word order in translating from one language to another?

2. How can they take account of context so as to select the proper meaning of a word having two or more meanings?

Can the reverse process be achieved to combat disease? Laboratory experiments suggest that dangerous viruses may indeed be changed into innocuous forms, and that new techniques for treating virus illnesses may involve the use of special mutation-producing substances. Further research may lead to the production of similar changes in

## Main Research Proposals

Special to The New York Times.

**WASHINGTON, Oct. 27—**Following is a summary of the principal recommendations made by the National Science Foundation for promoting the growth of basic scientific research in this country:

**Aid by Industry**—Private industry should increase its support of basic research by giving more funds to universities and conducting more basic research in its own laboratories. Management must become sensitive to the fact that lack of scientific knowledge is "a roadblock to its progress."

**Professional Support**—Research institutes, foundations, professional societies and other nonprofit organizations should be encouraged toward greater support of basic research.

**Incentives**—Incentives should be provided for industry, private organizations and individuals to increase their gifts for basic research. Such incentives might be provided by changing the tax laws.

**Federal Funds**—Government development work in universities should be reduced, and the reduction should be accompanied by significant increases in the support of basic research. Where private funds are inadequate, the Federal Government should support basic research in universities. The Federal Government should supply funds for costly research facilities needed by universities.

**Few Restrictions**—Federal grants should carry a minimum of restrictions on the freedom of scientists and universities.

**Better Understanding**—Closer relations and better understanding should be developed between scientists and members of Congress in view of the increasingly important role of science in national and international affairs.

development to gross national product.

3. A country still technologically underdeveloped, as indicated by the low starting level of its research and development—and the low level which still prevails—relative to the United States.

4. A relatively heavy emphasis on basic research, certainly heavy if compared with the United States, but differing from our situation in the authoritarian controls exercised in a dictatorship.

Competition among nations in basic research is normal, and publication of results assures availability of its benefits to all. But a nation that is making strong efforts in its industrial and agricultural development and correspondingly improving the general economy and the health of its people cannot sit back complacently and await the results of basic research published by the scientists of other countries. In its own interest a nation needs to be on its own, and pull its share of the load. The value of output of good basic research is one factor in the rating of a nation's status in the family of nations.

It would appear that the United States has a formidable competitor in the Soviet Union which, although starting from a relatively low research-and-development level, is progressing at a remarkably rapid rate. In addition to stressing technological aspects of its economy, the Soviet Union seems to be able to draw heavily on educational and intellectual structure, developed long before the coming of the present political regime, closely resembling European structures with a strong emphasis on basic research. There is also evidence of able, high-ranking administrative leadership toward increasing the stature of the country in science and technology.

The Soviet situation may well produce a more effective balance between basic research and applied research-development than that existing in the younger and more technologically oriented system of the United States. As we continue the effort to maintain our relative position, indeed to excel, in basic research, we must remain aware of the large reservoir of untapped manpower in the Soviet Union and the availability of ample funds for the support of future scientists and engineers.

Forces of a political nature may exert some effect in working against these positive tendencies. Yet a rather effective atmosphere exists in the Soviet Union for the education and use of capable, devoted scientists with less interest in the immediate applications of science. Such a situation is likely to give the United States a short-run advantage in technology. But if this country is not to suffer in the long run, it must act upon the principle that progress in applied research and development depends absolutely on the growth and encouragement of

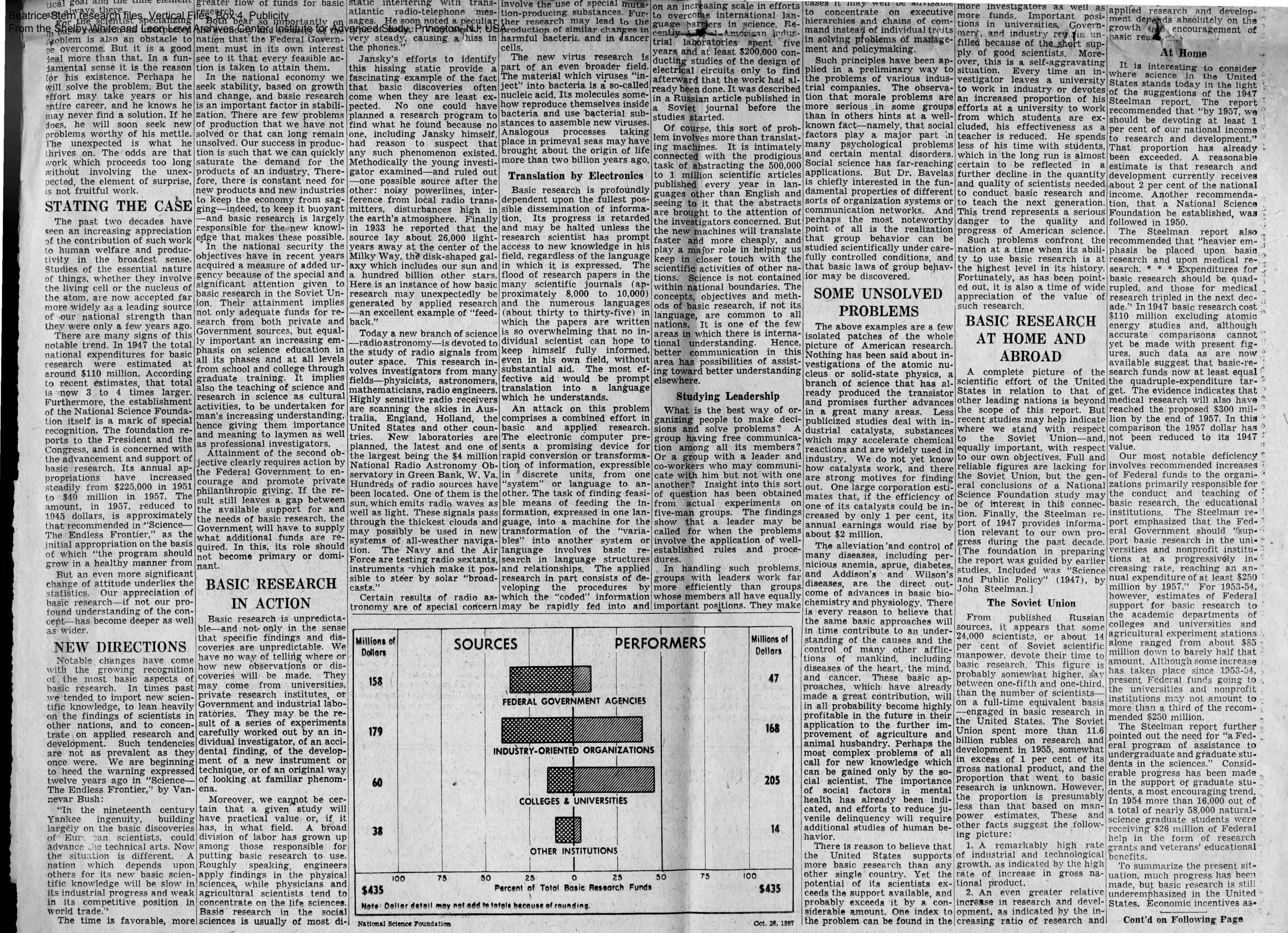
fewer errors, arrive at correct decisions more quickly and work more systematically. The only difficulty is that morale tends to be low, and all members except the leader feel unimportant. Groups without leaders are slow, inaccurate, but happy. They come into their own, however, if the type of problem is changed. When the problem demands judgment and action not readily spelled out in rulebooks, they outperform "leader" groups by an appreciable margin.

These experiments and others were originally devised by the social scientist, Dr. Alex Bavelas, and his associates working at the Massachusetts Institute of Technology. Similar studies are now under way at other universities and at industrial laboratories; the Department of Defense has used some of the results to help solve certain military problems. The research has many important implications. For one thing, it shows that there is no such thing as the "best" organization, although groups may be organized to form a balanced combination of efficiency, morale and freedom of communication.

The experiments also throw light on the elusive concept of leadership. Until recently, emphasis has been chiefly on psychological tests designed to measure such things as quick thinking, judgment and the ability to adjust. But it seems that personal qualities are not the whole story. Leadership also depends significantly on how groups are organized. In many cases it may well be advisable to concentrate on executive hierarchies and chains of command instead of individual traits.

Indeed, after a study of the situation in Great Britain, Prof. Richard Meier of the University of Chicago, reports: "If it is assumed that the productivity of applied scientists and development engineers is the same everywhere, one must conclude that the United States will benefit about three times as much from current British research as does the whole sterling area." However, the increasing support of American research during the past decade recognizes the fact that we can no longer afford to depend on other countries for the basic discoveries we apply.

Of course, there is a need for more investigators as well as more funds. Important positions in universities, Government



static interfering with transatlantic radio-telephone messages. He soon noted a peculiar vibration-producing substance. Further research may lead to the production of similar changes in harmful bacteria, and in cancer cells.

The new virus research is part of an even broader field. The material which viruses "inject" into bacteria is a so-called nucleic acid. Its molecules sometimes reproduce themselves inside bacteria, and use bacterial substances to assemble new viruses. Analogous processes taking place in primeval seas may have brought about the origin of life more than two billion years ago.

## Translation by Electronics

Basic research is profoundly dependent upon the fullest possible dissemination of information. Its progress is retarded and may be halted unless the research scientist has prompt access to new knowledge in his field, regardless of the language in which it is expressed. The flood of research papers in the many scientific journals (approximately 8,000 to 10,000) and the numerous languages (about thirty to thirty-five) in which the papers are written is so overwhelming that no individual scientist can hope to keep himself fully informed, even in his own field, without substantial aid. The most effective aid would be prompt translation into a language which he understands.

An attack on this problem comprises a combined effort in basic and applied research. The electronic computer presents a promising device for rapid conversion or transformation of information, expressible in discrete units, from one "system" or language to another. The task of finding feasible means of feeding the information, expressed in one language, into a machine for the transformation of the "variables" into another system or language involves basic research in language structures and relationships. The applied research in part consists of developing the procedures by which the "coded" information may be rapidly fed into and called for when the problems involve the application of well-established rules and procedures.

In handling such problems, groups with leaders work far more efficiently than groups whose members all have equally important positions. They make

cases it may well be advisable to concentrate on executive hierarchies and chains of command instead of individual traits in solving problems of management and policymaking.

Such principles have been applied in a preliminary way to the problems of various industrial companies. The observation that morale problems are more serious in some groups than in others hints at a well-known fact—namely, that social factors play a major part in many psychological problems and certain mental disorders. Social science has far-reaching applications. But Dr. Bavelas is chiefly interested in the fundamental properties of different sorts of organization systems or communication networks. And perhaps the most noteworthy point of all is the realization that group behavior can be studied scientifically under carefully controlled conditions, and that basic laws of group behavior may be discovered.

## SOME UNSOLVED PROBLEMS

The above examples are a few isolated patches of the whole picture of American research. Nothing has been said about investigations of the atomic nucleus or solid-state physics, a branch of science that has already produced the transistor and promises further advances in a great many areas. Less publicized studies deal with industrial catalysts, substances which may accelerate chemical reactions and are widely used in industry. We do not yet know how catalysts work, and there are strong motives for finding out. One large corporation estimates that, if the efficiency of one of its catalysts could be increased by only 1 per cent, its annual earnings would rise by about \$2 million.

The alleviation and control of many diseases, including pernicious anemia, sprue, diabetes, and Addison's and Wilson's diseases, are the direct outcome of advances in basic biochemistry and physiology. There is every reason to believe that the same basic approaches will in time contribute to an understanding of the causes and the control of many other afflictions of mankind, including diseases of the heart, the mind, and cancer. These basic approaches, which have already made a great contribution, will in all probability become highly profitable in the future in their application to the further improvement of agriculture and animal husbandry. Perhaps the most complex problems of all call for new knowledge which can be gained only by the social scientist. The importance of social factors in mental health has already been indicated, and efforts to reduce juvenile delinquency will require additional studies of human behavior.

There is reason to believe that the United States supports more basic research than any other single country. Yet the potential of its scientists exceeds the support available, and probably exceeds it by a considerable amount. One index to the problem can be found in the increasing scale in efforts to overcome international language barriers in science. Recently, the American industrial laboratories spent five years and at least \$200,000 conducting studies of the design of electrical circuits only to find afterward that the work had already been done. It was described in a Russian article published in a Soviet journal before the studies started.

Of course, this sort of problem involves more than translating machines. It is intimately connected with the prodigious task of abstracting the 500,000 to 1 million scientific articles published every year in languages other than English and seeing to it that the abstracts are brought to the attention of the investigators concerned. But the new machines will translate faster and more cheaply, and play a major role in helping us keep in closer touch with the scientific activities of other nations. Science is not contained within national boundaries. The concepts, objectives and methods of basic research, if not its language, are common to all nations. It is one of the few areas in which there is international understanding. Hence, better communication in this area has possibilities of assisting toward better understanding elsewhere.

## Studying Leadership

What is the best way of organizing people to make decisions and solve problems? A group having free communication among all its members? Or a group with a leader and co-workers who may communicate with him but not with one another? Insight into this sort of question has been obtained from actual experiments on five-man groups. The findings show that a leader may be called for when the problems involve the application of well-established rules and procedures.

In handling such problems, groups with leaders work far more efficiently than groups whose members all have equally important positions. They make

more investigators as well as more funds. Important positions in universities, Government, and industry remain unfilled because of the short supply of good scientists. Moreover, this is a self-aggravating situation. Every time an investigator leaves a university to work in industry or devotes an increased proportion of his efforts at a university to work from which students are excluded, his effectiveness as a teacher is reduced. He spends less of his time with students, which in the long run is almost certain to be reflected in a further decline in the quantity and quality of scientists needed to conduct basic research and to teach the next generation. This trend represents a serious danger to the quality and progress of American science.

Such problems confront the nation at a time when its ability to use basic research is at the highest level in its history. Fortunately, as has been pointed out, it is also a time of wide appreciation of the value of such research.

## BASIC RESEARCH AT HOME AND ABROAD

A complete picture of the scientific effort of the United States in relation to that of other leading nations is beyond the scope of this report. But recent studies may help indicate where we stand with respect to the Soviet Union—and, equally important, with respect to our own objectives. Full and reliable figures are lacking for the Soviet Union, but the general conclusions of a National Science Foundation study may be of interest in this connection. Finally, the Steelman report of 1947 provides information relevant to our own progress during the past decade. [The foundation in preparing the report was guided by earlier studies. Included was "Science and Public Policy" (1947), by John Steelman.]

## The Soviet Union

From published Russian sources, it appears that some 24,000 scientists, or about 14 per cent of Soviet scientific manpower, devote their time to basic research. This figure is probably somewhat higher, say between one-fifth and one-third, than the number of scientists—on a full-time equivalent basis—engaged in basic research in the United States. The Soviet Union spent more than 11.6 billion rubles on research and development in 1955, somewhat in excess of 1 per cent of its gross national product, and the proportion that went to basic research is unknown. However, the proportion is presumably less than that based on manpower estimates. These and other facts suggest the following picture:

1. A remarkably high rate of industrial and technological growth, as indicated by the high rate of increase in gross national product.
2. An even greater relative increase in research and development, as indicated by the increasing ratio of research and

applied research and development depends absolutely on the growth and encouragement of basic research.

## At Home

It is interesting to consider where science in the United States stands today in the light of the suggestions of the 1947 Steelman report. The report recommended that "by 1957, we should be devoting at least 1 per cent of our national income to research and development." That proportion has already been exceeded. A reasonable estimate is that research and development currently receives about 2 per cent of the national income. Another recommendation, that a National Science Foundation be established, was followed in 1950.

The Steelman report also recommended that "heavier emphasis be placed upon basic research and upon medical research. \* \* \* Expenditures for basic research should be quadrupled, and those for medical research tripled in the next decade." In 1947 basic research cost \$110 million excluding atomic energy studies and, although accurate comparisons cannot yet be made with present figures, such data as are now available suggest that basic-research funds now at least equal the quadruple-expenditure target. The evidence indicates that medical research will also have reached the proposed \$300 million by the end of 1957. In this comparison the 1957 dollar has not been reduced to its 1947 value.

Our most notable deficiency involves recommended increases of Federal funds to the organizations primarily responsible for the conduct and teaching of basic research, the educational institutions. The Steelman report emphasized that the Federal Government should "support basic research in the universities and nonprofit institutions at a progressively increasing rate, reaching an annual expenditure of at least \$250 million by 1957." For 1953-54, however, estimates of Federal support for basic research to the academic departments of colleges and universities and agricultural experiment stations alone ranged from about \$85 million down to barely half that amount. Although some increase has taken place since 1953-54, present Federal funds going to the universities and nonprofit institutions may not amount to more than a third of the recommended \$250 million.

The Steelman report further pointed out the need for "a Federal program of assistance to undergraduate and graduate students in the sciences." Considerable progress has been made in the support of graduate students, a most encouraging trend. In 1954 more than 16,000 out of a total of nearly 58,000 natural-science graduate students were receiving \$26 million of Federal help in the form of research grants and veterans' educational benefits.

To summarize the present situation, much progress has been made, but basic research is still underemphasized in the United States. Economic incentives as-

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# Joint Federal and State Financial Support of Scientific Study Is Emphasized

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sure the immediate future of applied research and development. But these incentives do not have direct and immediate impact on basic research, and redoubled efforts are required if it is to keep pace with the rising demands of technology.

## STRENGTHENING BASIC RESEARCH

In the national interest the support of basic research should be increased considerably, and the Federal Government must assume active leadership in offering encouragement and incentives toward this end. But active leadership does not mean that the increase should come entirely from Federal sources, nor should it imply centralized control or management. Indeed, as has already been pointed out, increased support should also come to a large extent from non-Federal sources: private industry, state governments, foundations, and the general public.

An important problem arises in this connection. Achievements in applied research and development are widely described, particularly achievements in clinical medicine. The possibility of discovering a new drug, for example, often has such a strong emotional appeal that adequate funds for experiments may not be hard to come by. The experiments may, and usually do, represent an outgrowth of fundamental studies conducted at another time, another place, and for other purposes.

Achievements in basic research receive relatively little attention. The reason is not that such investigation lacks emotional appeal, although it is certainly easier to publicize a new medicine than a new finding about the mechanisms of enzyme action. But the appeal of basic research, the appeal of exploring the unknown whatever it may reveal, has not been used as fully as possible.

This job remains as a challenge to science journalists and others concerned with bringing research to nonscientists. Since the challenge has not been met, it is no wonder that people respond more readily to programs emphasizing practical results. Yet the future of basic research depends largely on their cooperation. The Federal Government needs to explore all possible ways of stimulating such cooperation, although it may have to provide support when other sources are inadequate.

## A MORE ACTIVE ROLE FOR INDUSTRY

Industrial use of the results of basic research has brought expanding markets, new products, more jobs, more leisure, and a fuller life; and industry's financial gains from basic research are appreciable, in many cases spectacular. As a matter of fact, some investors in industrial securities use as a guide the activity of an industry in research, together with information about the effectiveness of such activity in leading to new processes and products. As na-



**BASIC RESEARCH:** This is an electron micrograph of Asian influenza virus, magnified 35,000 times. Research in this field, according to the National Science Foundation, furnishes clues to the reproduction of all forms of life.

Federal Government might, for example, take the form of assisting in every way possible the current and planning activities of research-conscious industries and of stimulating industries which show little interest in the pursuit or support of basic research. The progress of research. The situation continues to be a source of considerable concern, perhaps more so today than ever before, as the volume of published information increases throughout the world.

The language barrier certainly represents a major difficulty and research on electronic translating machines, mentioned earlier in this report, is only one approach to the problem. There has been a notable tendency among scientists of all nations to follow the easiest course, and concentrate almost exclusively on research underway in their own countries or published in the native languages. An appreciable proportion of papers do not even refer to work being conducted in foreign laboratories.

## NONPROFIT ORGANIZATIONS

### Research Institutes

Such organizations, particularly those receiving tax-exemption privileges, may be justifiably expected to put more emphasis on basic research. It has been suggested that Federal tax-exemption privileges for nonprofit research institutes be modified, along lines of more precise distinction between research performed for the restricted use of clients and

exemption policies for such institutions would clarify those uncertainties and encourage increased attention to basic research.

### Private Foundations

The large private foundations spent some two-thirds of their 1953 funds for science on basic research (nearly \$17 million), a lower proportion than was spent in 1939. The shift away from basic research reflects foundation efforts to aid in the study of pressing public problems.

The shift is influenced by current Federal emphasis on applied research in the interests of national security, health, agriculture, and resource development. The foundations have also entered these areas, especially by encouraging or conducting research and other activities which are not feasible for the Government to undertake directly. Being relatively free of political and public pressure and less complex than the Government, they have stimulated unique experimentation and inquiry.

It is neither appropriate nor desirable that the Government try to deflect the private foundations from their avowed interests and approaches. But Federal agencies supporting scientific research should exchange information with these organizations on a continuing basis. The objective is to discover and emphasize fields where basic research is particularly needed.

### Professional Societies

Scientific and professional societies have long contributed to the advancement of basic research in the United States and elsewhere. Their journals and other publications bring much new knowledge to the attention of scientists. Generally, the societies do not represent a significant source of support for the conduct of research, and it is not suggested that they launch large-scale financial operations along such lines.

But in one area at least, special efforts would be of considerable value. Since industry may by choice or indifference fail to publish an appreciable proportion of its basic research, the societies might take an active part in encouraging industrial scientists to submit more papers on basic-research studies. These papers could be significant additions to the flow of information in many scientific fields.

## INCREASED SUPPORT BY STATE GOVERNMENTS

### Federal-State Sharing

Legislative appropriations to state universities represent an important share of basic research funds in the United States. A foundation survey for 1954 indicates that Connecticut, New Mexico, Wisconsin, California, New York and North Carolina together spent more than \$20 million for basic research (out of a total of \$57 million for research and development). Practically all these funds went to state universities and agricultural experiment stations, except in the case of New York, which spent \$2 mil-

lion for research and development. It is understandable that such Federal funds have been made available to educational institutions, and that the institutions have come to depend increasingly on them for their financial support.

As far as Federal-state matching arrangements are concerned—that is, cost participation on a 50-50 basis—responses tend to follow a typical pattern. During the first two or three years the states are reluctant to appropriate the required state funds. But soon most states participate fully in a program until, with hardly an exception, their contributions considerably exceed those required to match Federal funds (sometimes by a factor as high as five to ten times). If a program of Federal-state cost participation for basic-research support could be reasonably expected to follow such a pattern, a uniform and national procedure might then be considered.

## FEDERAL SUPPORT OF BASIC RESEARCH

### Shift in Financing

The conduct of basic research would be stimulated if the Federal Government increased its support of basic research at institutions of higher learning, particularly at universities with graduate schools. The increase might properly reach the point where total funds from all sources were adequate to support fully the competent research workers in all departments, including engineering and medicine, who were available and wished to do basic research. The institution, of course, would determine availability.

It would contribute to the same end, if the policy were adopted by all research-supporting Federal agencies to make contracts for applied research and development at such institutions, if and only if the following conditions were met. First, the work must be demonstrably essential to national defense or welfare. Second, the work cannot adequately be done by industrial laboratories, Federal laboratories, research institutes, or research centers—approached in that order; or a selected university has unique competence in the area of interest. Such policy, if adopted, should be put in effect as funds for basic research are increased from Federal and non-Federal sources, so as to minimize any unfavorable effects that might result from such changes if they were too abruptly made.

The shift of Federal support away from applied and toward basic research may be a matter of concern to some educational institutions. They may feel that a drastically reduced level of applied research and development funds may seriously affect their operations. They may further feel that a continuing rising level of support is necessary, because greatly increased enrollments are bound to have first call on their operating funds.

If present types of Federal support interfere seriously with the education of students, it is possible that general-purpose grants by the Government to science departments or institutions might be used to good effect, but serious difficulties in this procedure must be recognized. First, such Government grants might become the means for deficit financing of colleges and universities, and this would be undesirable because of the control or intrusion which might follow. The institutions cannot afford to lose their administrative or intellectual freedom of action.

Second, the establishment of a regular method of deficit financing would surely result in a relaxing of effort by the recipient institutions to secure funds from other sources.



Harris & Ewing  
PRESENTED REPORT:

**Dr. Alan T. Waterman,** who is director of the National Science Foundation.

dividuals. The Federal Government, by the "residual responsibility" principle, should be ready to provide funds not forthcoming from non-Federal sources. But Federal support should never be dominant, as it might become if these other sources did not accept a commensurate responsibility.

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## PHYSICAL FACILITIES

When other sources are not available, the Federal Government must continue to provide funds for large-scale facilities

countries or psychological warfare?

As Federal funds for basic research increase, we find an increasing interest in possible ways of evaluating the tangible returns which the American taxpayer has received and may expect to receive for his money. Such a desire is understandable and must be recognized. However, because of the nature of basic research, any attempt at immediate quantitative evaluation is impractical and hence not realistic. Basic research would lose its potency in adding significantly to knowledge and understanding of nature, if it were circumscribed by the requirement that it justify its costs to the taxpayer by proving its value through immediate practical benefits. The most to be expected is to show how certain great industrial successes and great contributions to health and other public benefits were dependent upon basic research. Usually the difficulty is the timelag of ten to twenty years between publication of results and their exploitation.

But there is another strong justification for basic research which is not related to its unique position of being the indispensable basis for practical developments. From the earliest times, philosophers have recognized man's universal "desire to know," which expresses itself in his urge to investigate. Satisfaction of that strong desire, whatever the subject or field of interest, is as essential to man's intellectual and spiritual advancement as is the satisfaction of his need for food to his physical well-being.

Basic research is so closely identified with cultural as well as technological progress that this alone provides sufficient reason for doing and supporting it.

In the long run, basic research pays off in the most practical terms, as some industrial laboratories have found by their policy of calculated investment risks. It took years of basic research before the Bell Telephone Laboratories developed the transistor, for example. But direct and immediate links between basic research and its applications are extremely rare.

As a general principle, Federal support to physical facilities should require reasonable financial participation on the part of the institutions concerned. But hard-and-fast rules, such as a standard "matching" formula, are not called for. In certain cases, they could discriminate against institutions with the least funds of their own and actually discourage non-Federal contributions. The degree of Federal cost participation should rest upon mutually satisfactory arrangements.

## IMPROVED FEDERAL ADMINISTRATION

### Simplified Regulations

A large proportion of research funds available to universities and colleges is restricted in use, and Federal funds are no exception. The policy of an institution tends to be markedly influenced by the wishes of its friends and builders. The scarcity of "free" funds which might be allocated to unbalanced and self-determined programs makes it all the more important that Federal funds be provided

countries or psychological warfare?

As Federal funds for basic research increase, we find an increasing interest in possible ways of evaluating the tangible returns which the American taxpayer has received and may expect to receive for his money. Such a desire is understandable and must be recognized. However, because of the nature of basic research, any attempt at immediate quantitative evaluation is impractical and hence not realistic. Basic research would lose its potency in adding significantly to knowledge and understanding of nature, if it were circumscribed by the requirement that it justify its costs to the taxpayer by proving its value through immediate practical benefits. The most to be expected is to show how certain great industrial successes and great contributions to health and other public benefits were dependent upon basic research. Usually the difficulty is the timelag of ten to twenty years between publication of results and their exploitation.

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As regular efforts to appraise quantitatively the practical results of Federal projects might give the impression that they were not "paying off." Even more important, such appraisals would encourage both Federal administrators and scientists to concentrate on work most likely to pay off in the short run and bias our scientific effort still further toward applied research and development.

## A FORUM FOR SCIENCE

Considerable evidence indicates that basic research has made significant contributions to the technological and cultural progress of the United States and to our security and well-being. Some of the evidence has been presented in this report. The advancement of science has brought with it a deeper understanding of new sources of energy. With it have also come methods of obtaining the power needed to expand industrially



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THE NEW YORK TIMES, TUESDAY, NOVEMBER 5, 1957.

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## FRENCH DECORATE DR. OPPENHEIMER

**Embassy Discloses He Was Made Officer of Legion of Honor on Sept. 25**

Special to The New York Times.

WASHINGTON, Nov. 4—The French Embassy disclosed today that Dr. J. Robert Oppenheimer had been made an officer of the Legion of Honor.

The decoration was given to Dr. Oppenheimer on Sept. 25 in the office of the French cultural attaché in New York. No announcement was made at the time. An embassy spokesman confirmed the news when it was published today in The Washington Evening Star.

The embassy said that it knew of no special reason why the award had not been publicized. The decoration of the Legion of Honor is given to many Americans, it was said,



Associated Press

**HONORED:** Dr. J. Robert Oppenheimer wearing Legion of Honor rosette.

and announcements are not regularly made.

In Princeton, N. J., where Dr. Oppenheimer is director of the

Institute for Advanced Study, he said he understood awards such as his were not usually publicized.

"A number of my colleagues have received such honors and I've heard about it only when I read their obituaries," he said.

Dr. Oppenheimer, who played perhaps the leading role in the development of the atomic bomb, was labeled a security risk in 1954 after a celebrated and controversial hearing carried on by the Atomic Energy Commission. He was barred from access to A. E. C. restricted data.

In the wake of the recent demonstrations of Soviet scientific advances, there have been suggestions that the Administration re-examine its ban on Dr. Oppenheimer.

Representative Carl T. Durham, North Carolina Democrat, who heads the Joint Congressional Committee on Atomic Energy, said today that time had proved the futility of the security proceedings against Dr. Oppenheimer. The Representative has previously criticized the Oppenheimer security findings.

"I'm one of those who never

have believed you could close up the brain cells of theoretical physicists," Representative Durham said. "Time has proved you can't bottle up scientific minds."

A spokesman for the A. E. C. said there was no action under way to restudy Dr. Oppenheimer's status. Under commission rules a new look at the case could come only if a Government agency or contractor indicated a wish to hire him for secret work, or if Dr. Oppenheimer himself sought access to restricted data.

### Car Pound Addresses Listed

Four Sanitation Department car pounds in Manhattan will continue to receive cars towed from alternate-side-of-the-street parking areas, with four others being closed. The department listed yesterday the addresses of the four yards remaining open as West 155th Street and the Hudson River; East 129th Street and the Harlem River; Gansevoort Street and the Hudson River; and Montgomery Street and East River Drive.

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1932

April

GENERAL (C. S. MONITOR ARTICLE)

Public Relations

AYDELOTTE, F.

Biographical

Memo regarding above filed in Vertical File under ~~XXXX~~  
"P" for Public Relations.

See p 4  
(Einstein photo  
already )

A, 10/18/56, F. A., IAS

A Belgian University review begins an article about The Institute for Advanced Study, which is soon to open its doors in Princeton under the direction of Dr. Abraham Flexner, with the title "Einstein au Paradis des Chercheurs." The phrase is a translation of the expression which has been used by many American periodicals to describe the Institute, and, indeed, it exactly expresses the aims of the new institution of learning. The Founders, the Director, and the Trustees have embarked on a deliberate attempt to construct an educational utopia, to bring together a small group of the most eminent scholars and the ablest students and to surround them with ideal conditions for scholarly work.

The Institute will be unlike any existing American university in that it will be entirely for post-graduate study and research. Every other consideration will be subordinated to the quality of its faculty and of its small body of students. There will be a minimum of machinery and organization, the fewest possible regulations, and the greatest possible freedom. The plan is a bold one in its very simplicity.

The origin of the Institute was as dramatic as its plan is daring. A few years ago, just before his retirement from the general Education Board, Dr. Flexner gave the Rhodes Memorial Lectures at the University of Oxford on the subject of "Universities." The lectures were later published by the Oxford University Press and have attracted wide attention in university circles, because of the frankness of Dr. Flexner's

comments on the universities of England, Germany, France, and especially of the United States. As he was engaged in correcting the proofs of his volume, Dr. Flexner received a visit from the legal representative of two persons, whose names were not mentioned, who had formed the intention of devoting their fortune to some philanthropic purpose, and who were in search of advice as to precisely what purpose would be most useful. By way of reply Dr. Flexner handed over the proofs of one or two pages, in which he discusses what might be done to remedy certain defects of our American educational system to which he had drawn attention. In the course of his argument Dr. Flexner said:

"Progress might be greatly assisted by the outright creation of a school or institute of higher learning, a university in the postgraduate sense of the word. It should be a free society of scholars--free, because mature persons, animated by intellectual purposes, must be left to pursue their own ends in their own way. Administration should be slight and inexpensive. Scholars and scientists should participate in its government; the president should come down from his pedestal. The term 'organization' should be banned. The institution should be open to persons, competent and cultivated, who do not need and would abhor spoon-feeding--be they college graduates or not. It should furnish simple surroundings--books, laboratories, and above all, tranquillity--absence of distraction either by worldly concerns or by parental responsibility for an immature student body. Provision should be made for the amenities of life in the institution and in the private life of the staff. It need not be complete or symmetrical: if a chair could not be admirably filled, it should be left vacant. There exists in America no university in this sense--no institution, no seat of learning devoted to higher teaching and research. Everywhere the pressure of undergraduate and vocational activities hampers the serious objects for which universities exist. Thus undergraduate training is less efficient than it might be, if left to itself.

"What could be expected, if a modern American university were thus established? The ablest scholars and scientists would be attracted to its faculty; the most earnest students would be attracted to its laboratories and seminars. It would be small, as Gilman's Johns

Hopkins was small; but its propulsive power would be momentous out of all proportion to its size. It would, like a lens, focus rays that now scatter. The Rockefeller Institute for Medical Research is limited in scope; its hospital contains less than fifty beds. But its uncompromising standards of activity and publication have given it influence in America and Europe throughout the entire field of medical education and research. A university or a school of higher learning at the level I have indicated would do as much for other disciplines and might thus in time assist the general reorganization of secondary and higher education."

The suggestion appealed to the prospective donors.

Interviews were held, the plan was elaborated, and finally adopted, subject to one condition--that Dr. Flexner himself should consent to become the Director of the new Institute and launch it upon its career. It is not often that a critic of existing institutions has so immediate an opportunity to put his ideas constructively into practice. The offer was a challenge which could not be refused. And on May 20, 1930, the new Institute was formally incorporated, the Board of Trustees received a preliminary gift of \$5,000,000, and the work of organization began.

In a statement in which he "drafted the intellectual charter of the new university," Dr. Flexner emphasized the following points: The new institution is to be devoted to post-graduate study and research, divorced from ~~the~~ ~~the~~ "the charms and diversions" of undergraduate work. It is to be small in size, plastic in its organization, and severely limited, at least in the beginning, as regards the subjects with which it will undertake to deal. Salaries will be generous, and no man will be appointed to a professorship who has not, in the opinion of the Director and his advisers, achieved eminence in his field, or who does not show

promise of attaining such eminence. This limitation means that the teaching staff will always be small, and inevitably so at the beginning. The number of students will likewise be limited. Only those individuals will be admitted who show the greatest promise in their chosen fields. The Institute will grant but one degree--the Ph. D.--and it seems probable that the greater number of its students will be interested not in degrees but in the opportunity for research under stimulating guidance.

So far as subjects of study are concerned the policy of the Director and Trustees is [to attempt only those disciplines which are fundamental, omitting all subjects which are merely applications of fundamental knowledge to professional or utilitarian needs.] The plan is to proceed slowly, to attempt no subject for which eminent teachers are not procurable, and to begin, so far as possible, with those which are less adequately represented in American universities.

In accordance with these principles it has been decided to begin with a School of Mathematics. In this subject two professors have already been appointed: Einstein of Berlin and Veblen of Princeton. Professor Veblen has been at work since October 1932, and Professor Einstein will take up his duties in October 1933. It seems probable that the next school to be launched will be Economics. In each case the subject will be broadly interpreted. Einstein will be Professor of Mathematical Physics, and in the School of Economics there might well be a Professor of Statistics who would in a sense unite the two schools, or a Professor of Political Science or Social History, who would point the way to other fields. Further developments have not yet been resolved upon, and they

will in every case be slow. It will be a principle of the Institute to make no step forward which has not been long and carefully considered, to inaugurate no new subject of study in which the promise of usefulness is not great, and to leave any chair vacant unless a man of high ability can be found to fill it.

It was stipulated by the donors that the Institute should be located in New Jersey. For the sake of access to adequate library facilities, and for the sake of avoiding the isolation of so small a group of professors and students, a site near an established university was obviously desirable. For these reasons it has been decided to select for the new institution a location in or near the town of Princeton. No plot of ground has as yet been purchased, and the Professors of Mathematics will, through the kindness of the authorities of Princeton University, begin their work in Fine Hall. ~~The~~ <sup>and</sup> The Institute will in no sense become a part of Princeton University. It will have its own grounds and buildings, its own trustees, its own staff of teachers, and its own students. But it will gain much, thanks to the generous hospitality and the spirit of co-operation of the Princeton authorities, from access to the library and other university facilities <sup>and</sup> it should be able to make a contribution to the intellectual atmosphere and resources of the University in return.

In formulating the plan for the new Institute Dr. Flexner has consulted a long list of eminent scholars in various fields, both in America and Europe. In addition to the men whom he was able to consult personally, a large number

of others were consulted by letter. The questions asked in each case were much the same. What type of institution would make the greatest contribution to the intellectual life of the United States? What type of organization would most certainly produce the best results? What features of our American universities should be avoided and what ones imitated?

The answers from American scholars are most illuminating. Everywhere the tentative plans of the new Institute were hailed with enthusiasm. Not many novel ideas for its organization were suggested. Indeed, in the opinion of the majority, the precise features of the organization were unimportant. The three things most insisted upon were adequate salaries and allowance for books and assistance, small numbers, both of teachers and students, and the maximum freedom in which to work. The last point was the one most frequently insisted upon. Dr. Flexner has made the statement that the ideal conditions for the highest intellectual work are identical with those which might make possible complete idleness. On the mediocre level careful regulations are useful and perhaps necessary. They will serve to prevent waste of time, to distribute burdens equally and to increase the amount of work done even if they cannot improve its quality. But the best minds work best in freedom. Regulations may hamper them but they cannot help. Their output must be measured not in quantitative but rather in qualitative terms. This fact has been too much ignored in American education. The problem of large numbers of mediocre students (inevitably mediocre because in any nation there are and can be only a few of high quality) and too frequently

mediocre teachers, has driven us to put too much faith in system and organization and to apply to all students and professors a multitude of petty regulations which, while they may have some value for the average, are a sad hindrance to the best.

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Separately

"Freiheit und Gefahr sind nicht zu trennen," says Paulsen in discussing the question of Lehrfreiheit in his book on the German Universities. Freedom has its dangers, but those dangers must be faced by the institution which is searching for the highest excellence. For ~~The~~ Institute for Advanced Study no other course is possible than, first of all, to search for the best, both in professors and students, and then to leave them in freedom to work out their own salvation.

The Institute for Advanced Study will be small and, on that account, necessarily expensive. It can make no use of the methods of mass production. Its expenses, however, will be almost entirely in salaries and in facilities for work. Grounds and buildings will be modest--barely sufficient to provide comfortably for the work which is to be done in them. In the beginning there will be no laboratories and only working libraries for the various subjects undertaken. Administration will likewise be reduced to the simplest possible level. There should be no need for discipline nor even for examinations, except in the case of those students (probably a small minority) who will be candidates for degrees. The admission of students (subject to the limitations of the capacity of the Institute) will be determined largely by the professors with whom they are to do their work. Nine-tenths of the problems

with which most administrative officers have to deal will, for the Institute, simply not exist, and nine-tenths of the regulations under which university work is ordinarily done and degrees granted will be unnecessary.

The problem of the Institute will in these respects be simple and easy to solve. Its central aim, however, will not be easy to achieve. That aim is the production of important contributions to knowledge and the adequate training of a few really first-rate young scholars. For success in that high adventure no individual and no institution can give guarantees. By that success and by that alone will the new Institute justify the faith of the Founders, the Director, and the Trustees. If it succeeds, it should point the way for other institutions of learning and do its part in raising the intellectual standard of American post-graduate work. It is an experiment, in the outcome of which the whole educational world will have an interest.

Public Rel.

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This is preliminary copy

The editor of the Christian Science Monitor has asked me, as a Trustee of the Institute for Advanced Study, to outline the plan and purpose of that newly established addition to our national facilities for higher education. I am glad to comply because of my interest in the Institute-- its dramatic origin, its daring plan, and its extraordinary promise of future usefulness.

A few years ago, shortly after his retirement from the General Education Board, Dr. Flexner gave the Rhodes Memorial Lectures at the University of Oxford on the subject of "Universities." The lectures were later published by the Oxford University Press and have attracted wide attention in university circles, because of their drastic criticisms of England, Germany, France, and especially of the United States of America. As he was engaged in correcting the proofs of his volume, Dr. Flexner received a visit from the legal representative of two persons, whose names were not mentioned, who had formed the intention of devoting their fortune to some educational purpose, and who were in search of advice as to precisely what purpose would be most useful. By way of reply Dr. Flexner handed over the proofs of pages in which he said:

"Progress might be greatly assisted by the outright creation of a school or institute of higher learning, a university in the post-graduate sense of the word. It should be a free society of scholars--free, because mature persons, animated by intellectual purposes, must be left to pursue their own ends in their own way. Administration should be slight and inexpensive. Scholars and scientists should participate in its government; the president should come down from his pedestal. The term 'organization' should be banned. The institution should be open to persons, competent and cultivated, who do not need and would abhor

spoon-feeding--be they college graduates or not. It should furnish simple surroundings--books, laboratories, and above all, tranquillity--absence of distraction either by worldly concerns or by parental responsibility for an immature student body. Provision should be made for the amenities of life in the institution and in the private life of the staff. It need not be complete or symmetrical: if a chair could not be admirably filled, it should be left vacant. There exists in America no university in this sense--no institution, no seat of learning devoted to higher teaching and research. Everywhere the pressure of undergraduate and vocational activities hampers the serious objects for which universities exist. Thus science and scholarship suffer; money is wasted; even undergraduate training is less efficient than it might be, if left to itself.

"What could be expected, if a modern American university were thus established? The ablest scholars and scientists would be attracted to its faculty; the most earnest students would be attracted to its laboratories and seminars. It would be small, as Gilman's Johns Hopkins was small; but its propulsive power would be momentous out of all proportion to its size. It would, like a lens, focus rays that now scatter. The Rockefeller Institute for Medical Research is limited in scope; its hospital contains less than fifty beds. But its uncompromising standards of activity and publication have given it influence in America and Europe throughout the entire field of medical education and research. A university or a school of higher learning at the level I have indicated would do as much for other disciplines and might thus in time assist the general reorganization of secondary and higher education."

The suggestion appealed to the prospective donors.

Interviews were held, the plan was elaborated, and finally was adopted subject to one condition--that Dr. Flexner himself must consent to become the Director of the new Institute and launch it upon its career. It is not often that a critic of existing institutions has so and so dramatic an opportunity to put his idea constructively into practice. The offer was a challenge which could not be refused. And in May, 1930, the new Institute was formally incorporated, the Board of Trustees received a preliminary gift of \$5,000,000, and the work of inauguration began. It is obvious

will supply a large group of interested persons who will watch every step of its development critical attention.

The new institution is to be ~~developed~~ devoted to, graduate first, ~~general~~ study and research divorced from what Dr. Flexner has called "the charms and diversions" of undergraduate work. It is to be small in size, plastic in its organization, and severely limited, at least in the beginning, as regards the subjects of study *with* which it will *undertake to* deal. Salaries will be generous, and no man will be appointed to a professorship who has not, in the opinion of the Director and his advisers, achieved eminence in his field, or who does not show promise of attaining such eminence. This limitation means that the teaching staff will always be small and *inevitably* so at the beginning. The number of students will likewise be limited. Only those individuals will be admitted who show the greatest promise in their chosen fields. The Institute will grant but one degree--the Ph.D.--and it seems at least probable that the greater number of its students will be interested not in degrees but in the opportunity for research under stimulating~~xxx~~ guidance. It is interesting to note that the first four students with whom the Institute began its work this year have already taken their doctor's degrees and have

fellowships awarded by the National Research Council.

So far as subjects of study are concerned the policy of the Director and Trustees is to attempt only those subjects which are fundamental, omitting all subjects which are merely applications of fundamental knowledge to professional or utilitarian needs. The plan is to proceed slowly, to attempt no subject for which eminent teachers are not procurable, and to begin, so far as possible, with subjects which are less adequately represented in American universities.

In accordance with these principles it has been decided to begin with a School of Mathematics. In this subject three professors have already been appointed: Einstein of Berlin, Veblen of Princeton, and Weyl of Göttingen. Professor Veblen has been at work since October 1932, and Professors Einstein and Weyl take up their duties in October 1933. It seems probable that the next subject to be undertaken will be economics. In that case ~~xxxx~~ the subject of

and in the School of Economics there might well be a Professor of Political Science who would in a sense point the way to other fields. Further developments have not yet been resolved upon, and they will in every case be slow. It will be a principle of the Institute to make no step forward which has not been long and carefully considered, to inaugurate no new subject of study in which the promise of usefulness is not great, and to leave any chair vacant unless a man of high ability can be found to fill it.

It was stipulated by the donors that the Institute should be located in New Jersey. For the sake of access to adequate library facilities and for the sake of avoiding the isolation of so a group of professors and students a site near an established university was obviously desirable. For these reasons it has been decided to select for the new institution a site in or near the town of Princeton. No plot of ground has as yet been purchased, and the Professors of Mathematics will, through the kindness of the authorities of Princeton University, begin their work in Fur Hall. The Institute will in no sense become a part of Princeton University. It will have its own grounds and buildings, its own trustees, its own staff of teachers, and its own students. But it will gain much, thanks to the generous of the Princeton authorities, from access to the library and other facilities of the University; and it should be able in return to make a contribution to the interesting atmosphere and resources of the University.

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In formulating the plan for the new Institute Dr. Flexner has consulted a long list of eminent scholars in various fields, both in America and Europe. In addition to the men whom he was able to consult personally, a large number of others were consulted by letter. The questions asked in each case were much the same. What type of institution would make the greatest contribution to the intellectual life of the United States of America? What type of organization would most certainly produce the best results? What features

of our American universities should be avoided and what ones imitated?

The answers from American scholars are most illuminating. Everywhere the tentative plans of the new institute were hailed with enthusiasm. Not many novel ideas for the organization of the Institute were suggested. Indeed, in the opinion of the majority, the precise features of the organization were considered unimportant. The three things most insisted upon were adequate salaries and allowance for books and , small numbers, both of teachers and students, and the maximum freedom in which to work. The last point was the one most frequently insisted upon. Dr. Flexner, too, made the statement that the ideal conditions for the highest intellectual work were identical with those which might make possible complete idleness. On the mediocre level careful regulations are useful and perhaps necessary. They will serve to prevent waste of time, to distribute burdens equally and to increase the amount of work done even if they cannot improve its quality. But the best minds work best in freedom. Regulations may hamper them but they cannot help. Their

must be measured not in quantitative but rather in qualitative terms. This fact has been too much ignored in American education. The problem of our large numbers of inevitably mediocre students, and too frequently mediocre teachers, has driven us to put too much faith in system and organization and to apply to all students and professors a multitude of petty regulations which, while they may have some value for the average, are a sad hindrance to the best.

Freedom has its dangers, but those dangers must be

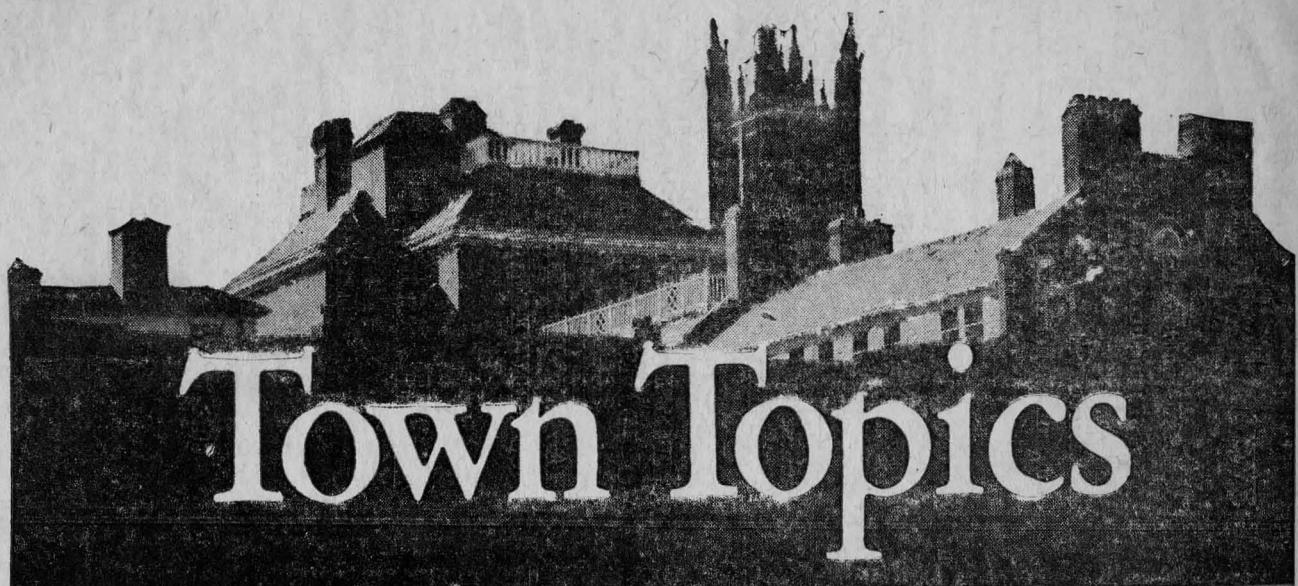
faced by the person, or institution, who is searching for the highest excellence. For the Institute for Advanced Study no other course is possible than, first of all, to search for the best, both in professors and students, and then to leave them in freedom to work out their own salvation.

The Institute for Advanced Study will be small and, on that account, necessarily expensive. It can make no use of methods of mass production. Its expenses, however, will be almost entirely in salaries and in facilities for work. Grounds and buildings will be modest--barely sufficient to provide comfortably for the work which is to be done in them. In the beginning there will be no laboratories and only working libraries for the various subjects undertaken. Administration will likewise be reduced to the simplest possible level. There should be no need for discipline nor even for examinations, except in the case of those students (probably a small minority) who will be candidates for degrees. The admission of students (of the capacity of the Institute) will be determined largely by the professors with whom they are to do their work. Nine-tenths of the problems with which most administrative officers have to deal will, for the Institute, not exist, and nine-tenths of the regulations under which university work is ordinarily done and degrees granted will be unnecessary.

The problem of the Institute will in these respects be simple and easy to solve. Its aim, however, will not be easy to achieve. That aim is the production of important contributions to knowledge and the adequate training

of a few really first-rate young scholars. For success in that high adventure no individual and no institution can give guarantees. By that success and by that alone will the new Institute justify the faith of the founders, the Director, and the Trustees.

Amer Philos Soc.



# Town Topics

## WE NOMINATE

The 41 residents of the Princeton Community whose membership in the American Philosophical Society, the blue-ribbon 220-year old learned society dating back to Benjamin Franklin's Philadelphia Junto, underscores the traditions of scholarship and teaching which have shaped modern-day Princeton. Nowhere else in these United States, including the mushrooming enclaves of research on the Pacific Coast and in the Greater Boston Area, is there a ratio of "Philosophical Members" to total population even faintly comparable to the one currently prevailing in the Borough and Township of Princeton and their immediate environs.

While membership in the Philadelphia-based Society, 15 of whose early members signed the Declaration of Independence and 18 of whom dominated the proceedings of the Constitutional Convention, can never be considered a "be-all and end-all" in the entwined spheres of education and research, election to it rests upon major achievements either in mathematics and the natural sciences, or the humanities, or the social sciences. Limited to 500 members in this country and 75 from overseas, the Society, meeting in its posh headquarters adjacent to Independence Hall, annually holds elections only to fill those openings created by death.

It was the newly announced election of 45-year old Ansley Johnson Coale, Director of Princeton University's Office of Population Research and understandably aware of population growth as the overwhelming problem of this century, that sent collectors of Princetoniana "into the stacks." The most reliable available sources show that 41 of New Jersey's 43 members are Princetonians. The "Princeton delegation", headed by mathematician Luther Pfahler Eisenhart, for long years the Philosophical Society's chief executive officer, compares with a total of 26 in Connecticut, 47 in Philadelphia,

68 in New York City, 78 in Greater Boston, 30 in the District of Columbia and 19 in Berkeley, California.

A breakdown of the Princeton "statistic" indicates that 27 are, or have been, affiliated with the University, that 13 are members of The Institute for Advanced Study, and that one, RCA's brilliant Russian-born Vladmir Kosma Zworykin, represents industrial research. The range of mankind's search for knowledge, from astronomy and particle physics to vertebrate paleontology and the restoration of the Agora in Athens, is reflected in the Princeton members' areas of specialization, while the contention that Princeton's rise to eminence is a post-World War II phenomenon is weakened by the fact that the Princeton associations of the great majority stretch back into the 1930's.

Coale's career, and his interests and accomplishments, suggest the qualities the Philosophical Society seeks to recognize. Following in the footsteps of his predecessor, and fellow Society members, Frank Wallace Notestein, now president of the Population Council, this native of Baltimore assumed direction of the Office of Population Research in 1959 and only after he had established himself as a demographer of the front rank. For instance, his appraisal of the accuracy of the 1950 U.S. Census pinpointed an undercount of 13 per cent in our non-white population and his studies of the broad topic of "Population and Economic Development" are proving invaluable to students of the underdeveloped nations.

For dramatizing the role Princeton and her institutions and laboratories are playing in an ever-changing world; for their achievements as creative individuals and, above all, for knowing that "to speak the truth we must first know the truth"; these 41 are TOWN TOPICS' nominees as

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138 Weyl younger learn from past  
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139 Special relativity 1915. Essence of the  
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## INSTITUTE FOR ADVANCED STUDY

A Center For World Scholarship and Research

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(1948/8)

About fifty miles south of New York City, in the university town of Princeton, New Jersey is an institute little known to the public, which is one of the most influential centers of higher learning in the world. Having no laboratories, no classes, nor even any students or teachers in the usual sense of the word, the Institute for Advanced Study was founded in 1930 to provide a quiet retreat for scholars of outstanding achievement. At the Institute they can work uninterrupted by the distractions of university or professional life. Unlike many universities, the development of the Institute has not been marked, nor is it to be measured by growth in the size of its buildings or student body. Its history and its present significance are to be found almost entirely in the men who are ~~x~~ and have been associated with it and in the concepts they embody.

To begin with, there was Abraham Flexner, who conceived of the Institute and was its first director. While neither a scientist nor a university professor himself, Flexner devoted many years to the study and stringent criticism of universities both in the United States and abroad. ~~Flexner's~~ ~~criticisms~~ ~~of~~ ~~universities~~ ~~and~~ ~~the~~ ~~excellence~~ ~~of~~ ~~formal~~ ~~institutions~~ ~~of~~ ~~learning~~ ~~were~~ ~~in~~ ~~his~~ ~~opinion~~ ~~inimical~~ ~~to~~ ~~the~~ ~~spirit~~ ~~of~~ ~~scholarship~~ ~~and~~ ~~research~~ ~~Flexner~~ ~~was~~ ~~steadfast~~ ~~in~~ ~~his~~ ~~conviction~~ ~~that~~ ~~the~~ ~~ideal~~ ~~university~~ ~~is~~ ~~a~~ ~~center~~ ~~of~~ ~~learning~~ ~~and~~ ~~not~~ ~~a~~ ~~center~~ ~~of~~ ~~teaching~~ ~~or~~ ~~instruction~~ ~~alone~~ ~~Huge~~ ~~formal~~ ~~institutions~~ ~~of~~ ~~learning~~ ~~were~~ ~~in~~ ~~his~~ ~~opinion~~ ~~inimical~~ ~~to~~ ~~the~~ ~~spirit~~ ~~of~~ ~~scholarship~~ ~~and~~ ~~research~~

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scholarship, while flexibility and free creative imagination were of its essence.

It was characteristic of Flexner's life that his criticisms  
and proposals were followed by concrete action. In 1930,  
an offer of a substantial endowment by a prominent business man made it possible  
for him to translate into reality his concept of an  
institute of scholars and scientists. The Association of  
Institutions Underwriting the Association for Publishing the  
Journal of the American Academy

~~xxxxxx~~ an extensive survey of scholarly and scientific talent both in the United States and in the universities of Europe.

From his wide acquaintance with eminent men in many fields, he invited suggestions as to how he might best achieve his purpose.

In every statement of policy ~~and~~ he took the utmost care to set no precedents which might encumber his successors. When he had completed his survey he decided that the study of higher mathematics would be the most appropriate subject with

His explanation of this choice reflects much of his philosophy ~~and~~ of scholarship.

"Mathematics has, to be sure, uses, as all the higher activities  
of the mind have uses. But its devotees are singularly unconcerned  
with use, most of all immediate use, and this state of mind and  
spirit, it seemed to me, ought to dominate the new institute."

Nothing is more likely to defeat itself, nothing is on the whole less productive in the long run than immediacy in the realm of research, reflection, and contemplation.

"On the other hand there exists the type of mind that derives its initial stimulus from a practical need or problem. Lavoisier, the founder of modern chemistry, is said to have been started on his road by the need of improving the lighting of the streets of Paris--Pasteur, Lister, Koch, Ehrlich all had their feet in both the world of practice and that of theory. Minds that are fundamental in their searching, whatever the spring that moves them--curiosity, pity, imagination, or practical sense--all belong in an institute for advanced study.

"Mathematicians deal with intellectual concents that they follow out for their own sake, regardless of their possible usefulness, but through this very freedom to pursue the apparently useless they stimulate scientists, philosophers, economists, poets

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and musicians. Mathematics was well adapted to our wish to remain flexible. Mathematics requires but a few men, a few students, and rooms, books and blackboards, chalk, paper and pencils. We endeavored, therefore, to bring together a fertile mathematical group to provide them ideal conditions to work in."

In the fall of 1933, the trustees appointed Professor Oswald Veblen of Princeton University as the first faculty member of the School of Mathematics, and the career of the Institute for Advanced Study began.

A handsome, four story brick building, of modified American colonial design, topped with a tall, white cupola, was built to house the Institute. It stands on a broad sweep of lawn with well-preserved trees more than a century old. In the distance, through the tops of the trees separating the Institute from the town of Princeton, can be seen the spires of Princeton University.

In addition to a library, administrative offices and a spacious lounge, much of the building is devoted to tastefully designed studies for permanent members. In the airy wings of the building are more individual studies and conference rooms. The gentle countryside roundabout is dotted with old colonial houses, some of them homes of permanent members. Along one of the country roads approaching the Institute is a row of cottage-like buildings in which many of the temporary members are quartered.

The activities which have been carried on over the years reflect with great consistency the ideas which Flexner outlined. Although there happens to be considerable agreement among the members as to their goals and responsibilities, these matters are not made into rigid policies. One of the few basic Institute policies is that individual members shall be free to think and work as they will. Policies: there are only the individual points of view of the members. Flexner and his successor directors stoutly resisted the good offices of professors who, from long university experience, sought to "organize" the Institute or make it more "efficient." The prevailing conviction is that

administration is not the proper concern of scholars; that the best administration is that which is invisible and confined to providing the membership with congenial and useful surroundings.

The majority of Institute members have temporary appointments, usually for a year. Permanent members are appointed by the trustees of the Institute for life, although after the age of sixty-five they have an emeritus status. Grants for temporary members range between three and four thousand dollars (~~one thousand~~), while grants to permanent members vary widely starting at six thousand dollars (~~six thousand~~) per year.

It is characteristic of the Institute that there is but one lecture room--and that a rather small one. While formal lectures are not discouraged, they are seldom found to offer the best means of communication between members. It is recognized that scientists working on the frontiers of knowledge are, to a certain extent, engaged in a lonely and individual enterprise and often that such projects are ill-adapted to group work. Anyone, however, is free to conduct his work and his dealings with other members in any way he chooses.

At present the Institute is comprised of three schools: the School of Humanistic Studies, the School of Economics and Politics, and, ~~the~~ largest, the School of Mathematics which includes the theoretical physicists. The development of the schools has been a process of natural growth rather than of conscious planning.

Very little attempt has been made to achieve an overall symmetry in their programs, and for the most part they function quite

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separately. Occasionally when a project, such as a recent seminar on Aristotle's Politics, involves members of all three schools, it is more likely to have been the result of a discussion over afternoon tea than a decision of a planning committee.

No matter how one approaches the Institute, one is struck with its dominant quality of internationalism. A casual visitor entering the lounge of the main hall finds there a large table strewn with the newspapers and journals of opinion of many nations. At almost any time of the day he will find one or more groups of the younger members from different countries in enthusiastic discussion. Represented in the temporary membership, more than half of which comes from countries other than the United States, are India, Israel, England, Japan, Austria, Holland, Poland, Germany, France, Czechoslovakia, Sweden, Ireland, Argentina, Italy, China, Greece and Canada. Informal discussions are marked by a rich variety of accents and mannerisms. In the physicist eager face of a woman ~~mathematician~~ from Ireland, a ~~mathematician~~ from China, and a mid-western American professor is a suggestion of many years of cumbersome, imperfect communication by letter and through scientific journals. At the Institute they find release for ideas for which in their own countries there may have been no suitable audience or adequate criticism. Ideas which are as much the product of a culture as an individual meet with those of another culture--as well as of another individual. Young scientists absorb and are able to express in

conversation with the important world figures of their field not only developed theories, but also embryonic ideas, fragments of insight.

The network of communication which is responsible for the Institute's international membership is, itself, the outgrowth of the nature of scholarship. A scientist, for example, working on a particular branch of mathematics is likely to know by reputation, if not personally, the outstanding men in his field in other countries, who, in turn, are acquainted with the younger men of talent and promise in their own country. The case of Dr.

Komaravolu Chandrasekharan, a young professor of mathematics at the Tata Institute of Fundamental Research in

Bombay ~~University~~, is illustrative. He was invited to the Insti-

tute after meeting an American mathematician and educator, ~~the~~ Professor Marshall Stone, who had gone to India on a government mission.

Since his arrival, Dr. Chandrasekharan, in turn, has been able to suggest several other Indian mathematicians who have also come to the Institute.

In his second year Chandrasekharan is working closely with Professor Hermann Weyl, a permanent member, whom many consider the leading man in the field of higher mathematics. Although some permanent members, like Professor Weyl, work with one or more of the temporary membership, most of the work at the Institute is done in independent study and research. In very large degree the younger members receive their stimulation and criticism from each other.

Like many another Institute member who has conducted his work under the adverse conditions of war or civil strife, Dr. Chandrasekharan has thought much about the conditions which are favorable to creative scientific research. "The Institute," he says, "provides the scholar with three matchless opportunities: first, the level of association is of the highest in the world; second, there are absolutely no limits set upon the academic and political freedom of its members; and, third, which follows naturally from the first two, it is of a completely international nature." Scholarship, he feels, is not only a matter of research and individual brilliance but also an appreciative state of mind and a way of life. He believes the effect of the Institute is to integrate standards of scholarship, to bring scientists into contact with the cultural, as well as the scientific, thinking of their foreign colleagues.

Chandrasekharan also thinks the Institute will have a considerable effect upon teaching methods. After a year at the Institute, a professor is likely to put less stress upon his students' ~~exactitude~~  
<sup>routine</sup> achievements or upon examinations; more likely to bend his efforts toward developing their imagination and creative powers. Many a young mind, grown cautious and conventional in university life, is liberated by forthright declarations such as that made by Wolfgang Pauli, the physicist famous for his ~~exclusion principle~~  
<sup>Exclusion Principle</sup> of quantum mechanics, while at the Institute. "The essential advance of physics," he said, "rests upon the creative imagination of the experimental as well as the theoretical investigator, and,

process of adapting abstract to practical problems contrary to the expensive ~~mechanical~~ principles, can not be forced by planning on a grand scale. We know, however, that this further development can take place only in an atmosphere of free investigation and unhampered exchange of scientific results."

Although the Institute is best known for its mathematicians and "pure" scholarship, Flexner also planned that it should include men of the world--businessmen, economists--who were looking for a place where they could work independent of the pressures of business or professional life. This idea has found expression in the School of Economics and Politics. The members of this department have chiefly concerned themselves with studies of current economic practices--fiscal policy and banking theory, for example. Several of the members of this school have been active in business and government enterprises. <sup>including the few members without doctorates, professors before 1920</sup> In the public's eye, however, the Institute is dominated by the giants of its School of Mathematics. The connection of the name of Dr. Albert Einstein with that School is sufficient to invest it with immortality. Probably no other scientist has received so much veneration and public attention as Dr. Einstein. His name, in addition to the honor it has received in scholarly circles, is, to the bemused layman, synonymous with the incomprehensible upper reaches of science.

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1st mention

INSERT ON RELATIVITY

94

Einstein's theory of relativity has been called the greatest single stride science has ever made. Like the discoveries of Copernicus, the theory of relativity was developed to ~~accommodate~~<sup>A</sup> experimental truths, at variance with theories then current. ~~and~~ explain knowledge which seemed ~~incongruous~~<sup>In the case of</sup> the geometry of Euclid and the physics of Newton. The inadequacy of these systems as descriptions of the known world was demonstrated conclusively in the famous Michelson-Morely experiments. These experiments revealed that the speed of light from a given celestial source is the same between two points on earth, whether the earth is moving toward or away from the source. According to the theories of mechanics then accepted, the speed of light across the earth's surface should have been diminished or increased by the speed at which the earth traveled toward or away from the light source.

Einstein, in effect, reconciled the Michelson-Morely finding with other observed facts by suggesting that the dimensions of any phenomenon depend upon its time relationship to the observer. The effect of this temporal relationship, in the case of the Michelson-Morely experiments, was, in substance, to alter the relative size of the measuring instruments so that changes in observer's velocity toward and away from the light source were cancelled out. Length, it was shown, depends upon motion. Thus it is impossible to measure the absolute static length of a body since that length varies, in a manner not directly observable, with its motion in space. When the time-space, or motion, element is accounted for, a reliable measurement may be made. Thus the components of measurement are not only up-and-down, right-and-left, backwards-and-forwards, but also sooner-and-later.

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Insert on Relativity -2-

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This highly revolutionary and perplexing theory might have remained a mathematical abstraction had not its author specific unpredictable by classical theories. predicted ~~such~~ phenomena ~~as~~ ~~as~~ ~~as~~ ~~as~~ ~~as~~ ~~as~~ forecast He not only ~~predicted~~ certain celestial events but he computed in advance just what their numerical magnitudes would be if universe. relativity theory correctly described the real ~~world~~. As is well known, Einstein was thoroughly correct in his calculations and the physical scientists of the world entered an era of unprecedented discovery. →

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seemingly so remote and contradictory to the world as he perceives it, and yet apparently so important to a more accurate understanding of the universe.

After deducing the equations of relativity, Dr. Einstein turned his attention to the theory of gravitation. He found that it was necessary to modify the law of gravitation to fit the new theory. This led him to the theory of general relativity, which he published in 1915. In this theory, space and time are not absolute, but are relative to the motion of matter. The theory predicted the bending of light by gravity, which was confirmed by an experiment in 1919. Dr. Einstein's theory of relativity has had a profound influence on modern physics, and has led to many important discoveries, such as the theory of black holes and the Big Bang theory of the origin of the universe.

Dr. Einstein's work on relativity and quantum mechanics has had a major impact on the development of modern science. His theories have been tested and confirmed by numerous experiments, and have become the foundation of much of our understanding of the physical world. For the rest of his life, Dr. Einstein plans to search for a "unified field theory" which will bridge relativity and quantum mechanics (the mathematics of the atom and its parts), and thus embrace all phenomena from the electron to the universe.

The growth of the School of Mathematics has been considerably influenced by Professor Oswald Veblen who works in the field of differential geometry. In particular he has worked on the application of mathematical analysis to the problem of invariant characteristics of the transformation of space raised by Einstein's theory of relativity. His present researches are on "spinors," the

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quantities which describe the rotation of electrons, protons and neutrons. Now emeritus due to the Institute's sixty-five year age limit on active membership, Veblen has strongly influenced the work of James W. Alexander which resulted in a theorem famous to mathematicians as the Alexander Duality Theorem. This process, by which the work of a younger man becomes both a continuation and a variation of that of an older member, is now being repeated through still a third and younger man, Professor Deane Montgomery.

**the**  
**the bridge between ~~this~~ mathematicians and the theoretical**  
**of this school**  
physicists is, in a manner of speaking, the work of Professor Hermann Weyl in pure mathematics.

Complementing the nucleus of scholars in permanent residence at the Institute are the scientists of international fame, like **Danish** Niels Bohr, the **Swedish** physicist, and Paul Dirac, the English **physicist** mathematician, who come for shorter periods. The driving imaginative personality of Bohr has been felt by theoretical physicists and students the world over. A graphic illustration of how men of Bohr's stature and vision can bring together the isolated work of several scientists is the story of his part in the splitting of the atom. The immediate story of the final experiments goes back to 1938 when Otto Hahn, Fritz Strassman and Lise Meitner, in repeating an experiment in atomic bombardment performed earlier by Enrico Fermi, an Italian physicist now teaching at the University of Chicago, were obtaining the element barium in their results where no barium, by all known standards, should have been. Shortly after this observation, Dr. Meitner, forced by the Nazis

! ff

to flee Germany, took refuge at the Copenhagen laboratory of Niels Bohr, himself, a leading figure in atomic theory. Dr. Meitner's tentative conclusion was that the barium had resulted from the fission or splitting of the uranium atom into two new elements nearly equal in atomic weight and that, according to an Einstein formula, a tremendous amount of energy should have been released. The news was at once transmitted to Bohr, who was working at the Institute for Advanced Study with Dr. Einstein, by his laboratory assistant, Otto Frisch, who himself prepared to verify the experiment. Bohr, for his part, communicated the information to Fermi and John R. Dunning at Columbia University in New York and the results were quickly verified. At a meeting of theoretical physicists at George Washington University in Washington, D.C. a few days later, Bohr had the privilege of announcing to the world that the atom had been split. The splitting of the uranium atom, however, had been expected to create a reaction of chain explosions. When this did not occur, Bohr who suggested that it was the rarer uranium isotope 235 which was responsible for the splitting and the more abundant isotope 238 which was inhibiting the process. This prediction proved correct when, in 1940, enough U-235 was isolated to make the test.

Bohr has always, in addition to his own researches, been a source of inspiration and a catalyst to the work of other scientists both at the Institute and elsewhere. In speaking of him, Einstein has said, "What is so marvelously attractive about Bohr as a scientific thinker is his rare blend of boldness and caution."

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seldom

/ has anyone possessed such an intuitive grasp of hidden things combined with such a strong critical sense. With all his knowledge of details, his eye is immovably fixed upon the underlying principle. He is unquestionably one of the greatest discoverers of our age in the scientific field."

MORE

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A major addition to the Institute and to the School of Mathematics was the appointment, in the fall of ~~1946~~<sup>1947,</sup> of Dr. Robert Oppenheimer as director. Within the circle of physicists Oppenheimer is regarded as one of the most brilliant young members of a profession that attracts only brilliant young men. Oppenheimer is in thorough agreement with the purpose of the Institute. Yet the Institute has changed under the impact of his restless, questing personality. It is more alert, less subject to the fustiness which, in so comfortable and stable an atmosphere, is a real danger. Aside from the example of his own personality, Oppenheimer has taken specific steps to enliven the Institute through discussion groups in which young scholars consider the relation of their science to political and social events, and through a closer relationship with Princeton University.

Although Oppenheimer's public fame derives in large measure from his work in the utilization of atomic energy, he is known among scientists for his work in cosmic ray theory. His work with that of Hidoki Yukawa of Japan (now an Institute member) resulted in the theory that the bulk of these rays ~~were~~<sup>was</sup> composed of then unknown particles -- particles which have since been ~~discovered~~<sup>observed</sup> and named mesons. A great deal of current physical theory about the binding force of the atomic nucleus is meson theory.

Under Oppenheimer's direction the Institute is giving increased emphasis to temporary membership. "First," he says, "we expect to invite people who have had experience outside the academic law field --- in business or politics, for example --- and who have reached the point where they have something to communicate, to take a year and gather their ideas together and write them down. Second, we are setting up a standing offer to help explore areas which have hitherto not been regarded as subject to scientific investigation."

He pictures the Institute as providing a continuous world traffic in ideas. His own involvement in world affairs and his wide cultural knows eight languages and appreciation -- he learned Sanskrit so that he could read Hindu philosophy in the original -- has led him to envision a wider scope of activities for the Institute.

Under his direction the future membership may as logically include painters and composers as students of the more traditional graduate subjects. He has given much thought to the role of the scientist in his environment of a world dominated by science. "The work of science is cooperative," he says, "A scientist takes his colleagues as judges, competitors, and collaborators. Science is disciplined in its rejection of questions that cannot be answered, and in its grinding pursuit of methods of answering all that it can. Science is always limited and is, in a profound sense, unmetaphysical in that it necessarily bases itself upon the broad ground of common human experience. Science is novelty and change, without which it dies. These qualities constitute a way of life which, of course, does not make wise men from foolish, or good men from wicked, but which has its beauty and which seems singularly suited to man's estate on earth."

to

-16-

In going on ~~this~~ evaluate what role the disciplines of science may play in shaping the modern world, he has said, "If one looks at past history, one may derive some encouragement for the hope that science, as one of the forms of reason, will flourish in all its forms. What perhaps characterizes the creative periods of the past, which we must be careful not to make more heroic because of their remoteness, was that there were many men who were able to combine in their own lives the activities of a scientist with activities of art and learning and politics, and were able to carry over from one into the others this combination of courage and modesty which is the lesson that science always tries to teach anyone who practices it."

With this concept of the scientist's ideal relation to his culture as a whole man rather than an intensely specialized one, the importance of the Humanistic School of the Institute is suggested. The members of this school study various cultural aspects of ancient civilizations. In contrast to the flights of the theoretical physicists into the unknown and the future in terms of abstract symbols, these members dig into the past in terms which seldom depart from the material objects of their study.

of Humanistic Studies

The major work of the ~~Humanistic~~ School is in the field of archaeology -- particularly the study of inscriptions and works of art unearthed in Athens. The Institute archaeologists are concerned with discovering, recording by photography and paper impressions called "squeezes," and classifying material excavated in Athens by the American Classical School. This material serves as the source for

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interpretive studies by historians, anthropologists and philosophers.

Thus while Professor Benjamin Merritt builds his collection of more

than twenty-six thousand documents of Greek life, a colleague in the  
**of Humanistic Studies**

~~Harvard~~ School, Professor Harold Cherniss, a philosopher, may use this

material for its relation to Greek philosophy. From graven tax records

of fifth century Athens, for example, is emerging a financial history

of the city which will give color and meaning to many other known

facts of that era of Athenian civilization. A third member of this

school, Professor Erwin Panofsky, is a specialist in the art of the Middle Ages, and the

Renaissance, a period which on superficial acquaintance might be

thought quite distant from ancient Athens, but actually, as a revival

of classicism, drew heavily upon classical Greek philosophy and aesthetics.

The masterpiece of Professor Hetty Goldman has been the excavation of

artifacts, particularly terra cotta figurines and pottery, from the

prehistoric remains of the Turkish city of Tarsus.

The work of the Humanistic School is completed with that of

Professor Elias Lowe, a paleographer. Professor Lowe has devoted his

life to the photographing and documenting of "every piece of Latin

These writings of a literary nature between 79 B.C. and 800 A.D. [dates]

evolution of the letter forms of which represent a fairly discrete period in the development of the Latin alphabet.

Seventy-nine L.C. is the date of earliest document.

Lowe's collection--  
a copy of a document in Hebrew, procured by Lowe from an ancient

a scrap of a document in Naples, preserved by lava from an ancient  
Eight hundred the classical

eruption of Vesuvius, ~~in~~ A.D. marks the revival of Roman scri

and letter forms  
Some which were and are now used in the town, ~~now~~ commonly used today.

P Like the archaeologists, Dr. Lowe is primarily concerned with recording basic data -- in ten magnificently produced volumes entitled Codices Latini Antiquiores -- which other men will use to interpret the civilization that produced them. The paleographer is chiefly an identifier: He must be able to identify examples of writing as genuine and, also, from their style, content, and materials to decipher the period in which they were produced. Dr. Lowe stresses, however, that the paleographer, like the theoretical physicist, must above all things have a keen, creative imagination and an intuitive appreciation of the nature of his work. He, also, to an equal if not greater degree than the theoretical physicist, depends upon continual communication with his colleagues.

The production of the Codices Latini Antiquiores exemplifies the kind of interchange of funds and men which is so important to all the Institute's work. After many years as a professor at Oxford University in England where he did much of the research for the Codices, Dr. Lowe was granted a fund of seventy-five thousand dollars (---rubles) by the Rockefeller Foundation in America with which to complete and publish his work. Oxford also contributed to this project by paying part of the cost of publication at the University's Clarendon Press. Then, in 1911, the Carnegie Institute entered the picture, granting Dr. Lowe a yearly stipend and, in 1929, he was invited to become a member of the Institute for Advanced Study which has since contributed greatly to his life project. Thus four agencies devoted to scholarship and research collaborated, informally but effectively, in producing an immensely thorough source work upon which future scholars may draw.

Dr. Lowe, nominally emeritus because of his age, is anxious to get on with his work. He is doing so, nurtured by the special intellectual climate which was the essence of its founder's concept when he wrote, "The men who have moved the world have followed the will-o'-the wisp of their own intellectual and spiritual curiosity. If we can make the Institute a congenial home for those who are curious in this sense, it will have its effect."

Caption

## INSTITUTE FOR ADVANCED STUDY

Robert Oppenheimer (right) the Institute's present director, listens intently as Dr. Albert Einstein, author of the theory of relativity, tells of his newest attempts to explain matter in terms of space.

Nearly all of the Institute's activities are housed in this building. Since its scientists do not work on practical applications of science they require no laboratories. Their tools are mathematical symbols, knowledge, imagination and reason.

Dr. Oppenheimer perches on a desk to discuss new developments in the quantum theory of the electron with a group of the Institute's young theoretical physicists. Envisioning the Institute as providing a world traffic in ideas.

Afternoon tea at the Institute often becomes an informal forum of world leaders in science and scholarship. Here Dr. Abraham Pais of Holland (right) talks with Dr. Oppenheimer and the English physicist, Paul Dirac (center).

Staff and faculty take their meals in the fourth floor cafeteria. While providing for its members needs, including housing, the Institute's emphasis is upon simplicity and utility.

A group of the Institute's young scholars holds an informal seminar. Contacts thus established between scientists of many nations, will be continued through letters and scientific journals when they return to their homelands.

Dr. Elias Lowe, a paleographer, has devoted his life to the study of ancient writings. Once appointed to the Institute, a scholar is free to conduct his work as he sees fit without supervision or interference.

Institute for Advanced Study

-2-

Professor Oswald Veblen, now emeritus, became the Institute's first member in 1933 after many years as professor of mathematics at Princeton University. He works on the mathematics of the theory of relativity.

Dr. Benjamin Merritt, an epigrapher, reads one of his 25,000 paper impressions taken from inscriptions on monuments, tablets, and buildings. His work will provide invaluable source material for other scholars.

Archaeologist

Archaeologist Dr. Homer A. Thompson sorts pictures of ancient Greek artifacts which he helped unearth at the Agora, the original public square of Athens. He has been at work on this project for seventeen years.

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THE WASHINGTON POST  
and TIMES HERALD  
Sunday, December 8, 1957

A 12

## For Oppenheimer

# Ike's Aides Urge Recall Of Scientist

By Erwin Knoll  
Staff Reporter

A majority of President Eisenhower's Science Advisory Committee believes that Government security clearance

should be restored to J. Robert Oppenheimer, and that he should be given an active role in speeding the Nation's lagging missile and satellite programs.

**Oppenheimer** —all intimately concerned with America's space race against the Russians—believe that (1) "we can't afford to waste an Oppenheimer" and (2) his return to Government work would stimulate the over-all scientific effort by demonstrating conclusively that the McCarthy era has ended.

Oppenheimer's reinstatement would be a "source of encouragement to the whole scientific community," says Isidor I. Rabi, Nobel Prize winning physicist who heads the President's Committee.

"It is still too early to judge the long-range effects of McCarthyism," Rabi told the London Sunday Times last month, "but the exclusion of Prof. Oppenheimer, a man who accomplished so much for his country, is indication of the failure of the country and the authorities to value correctly such contributions, both intellectual and substantial, to the welfare of the United States.

"Only when he is returned to more active Government service will it indicate that a change of heart has occurred."

### Endorse Statement

In a Washington Post survey of the President's 17-man Committee, eight other members endorsed Rabi's statement. None voiced opposition to Oppenheimer's reinstatement.

Only a week ago President Eisenhower announced that the Scientific Advisory Committee had been brought under direct White House jurisdiction to permit it to play a more effective role in counseling the President.

Members of the Committee who associated themselves with Rabi's statement were R. F. Bacher, professor of physics at the California Institute of Technology; Lloyd V. Berkner, president of Associated Universities; Hans A. Bethe, Cornell University; James B. Fisk, vice president of Bell Telephone Laboratories; George B. Kistiakowsky, professor of chemistry, Harvard University; E. M. Purcell, professor of physics, Harvard; Jerome B. Wiesner, head of the electronics laboratory at the Massachusetts Institute of Technology, and Jerold R. Zacharias, professor of physics at MIT.

Oppenheimer, who directed the first atomic bomb project, "was one of the very strongest members of the Government's



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Oppenheimer, who directed the first atomic bomb project, "was one of the very strongest members of the Government's military technology team," Zacharias commented.

The 1954 decision of the Atomic Energy Commission to bar Oppenheimer from access to Government secrets as a security risk "caused a great deal of soul searching among the scientists," Kistiakowsky said.

Fisk described it as "a wrong which should be righted now." Bethe called for reinstatement as "a symbol of what this country and our Government stand for."

Two other members of the President's Committee—Detlev V. Bronk, president of the National Academy of Science, and H. P. Robertson, professor of physics at the California Institute of Technology—declined to comment on Rabi's statement but expressed "high personal regard" for Oppenheimer.

#### No Comment

Four members refused to comment at all. They were William O. Baker of the Bell Telephone Laboratories; James R. Killian, President Eisenhower's new advisor on missiles; Edwin H. Land, president of the Polaroid Corp., and Herbert York, director of the Livermore Laboratories at the University of California.

Caryl P. Haskins, president of the Carnegie Institution, said he would need more time to study the problem before commenting, and the remaining member of the President's Committee, Lt. Gen. James H. Doolittle, could not be reached.

Support for Oppenheimer has also come from others.

Thomas E. Murray, former AEC Commissioner who voted against Oppenheimer in the 4 to 1 decision in 1954, said last month that he saw "no objection" to reopening the case, and added that he "would not be at all displeased if he were to be reinstated."

John P. Hagen, head of Project Vanguard, was asked recently, "If we want to keep in first place scientifically, can we waste an Oppenheimer?"

"Whether we want to stay in first place or last place, we can't afford it," Hagen replied.

Oppenheimer, who now heads the Institute for Advanced Research at Princeton, N.J., was deprived of security clearance because of former association with Communists.

### 3 Public Talks

FHE ★ PAGE 3  
Thursday, Feb. 27, 1964  
San Francisco Chronicle

## Oppenheimer Will Lecture at UC

Dr. Robert Oppenheimer, the famous physicist who led the development of the atomic bomb and is now director of the Institute for Advanced Study at Princeton, will deliver three public lectures at Berkeley in April, it was announced yesterday.

Oppenheimer has been appointed 1964 Hitchcock Foundation professor by the Graduate Council of the University of California. The post, to which many famous scientists have been named in past years, is financed by an endowment made early in the century by Charles M. Hitchcock and later enlarged

by his daughter, Lillie Hitchcock Coit.

Oppenheimer's lectures will have the general title of "Niels Bohr and His Times."

On April 23 he will speak on "Atomic Theory," April 28 on "Complementarity" and April 30 on "The Atomic Bomb."

Oppenheimer, who was denied access to classified Atomic Energy Commission records in the early '50s after a bitter hearing over development of the hydrogen bomb, was honored with the Fermi Award last December by President Johnson.

It was Oppenheimer's contention before the AEC that, in terms of what was then

known, it would be too costly to develop an H-bomb and the money could be better expended in other defense areas.

Meanwhile, UC physicist Dr. Edward Teller made a sensational breakthrough in solving the H-bomb production problem.

Dr. Oppenheimer left the UC faculty in 1947 to join Princeton.

## Kennedy to Attend Oppenheimer Fete

By JOHN W. FINNEY

Special to The New York Times

WASHINGTON, Nov. 21 — President Kennedy will present the \$50,000 Enrico Fermi Award to Dr. J. Robert Oppenheimer at a White House ceremony on Dec. 2, Administration officials disclosed today.

Presentation by the President will represent another step in the effort of the Administration to clear the name of the prominent physicist who was declared a security risk nearly a decade ago during the Eisenhower Administration.

The award, the highest honor conferred by the Atomic Energy Commission, has customarily been presented by the President. But in the case of Dr. Oppenheimer, according to officials, there was some ques-

**3** Continued on Page 23, Column 1

## President to Give Fermi Award To Oppenheimer at White House

Continued From Page 1, Col. 4

tion whether to continue this White House custom.

The Administration has not been insensitive to the possible political repercussions of giving an award to Dr. Oppenheimer. There was some hesitation, therefore, about the political desirability of having the President present the award personally at a public ceremony in the White House.

Ever since the commission announced in April that Dr. Oppenheimer would receive the award, the Administration has been watching with particular interest the political reaction.

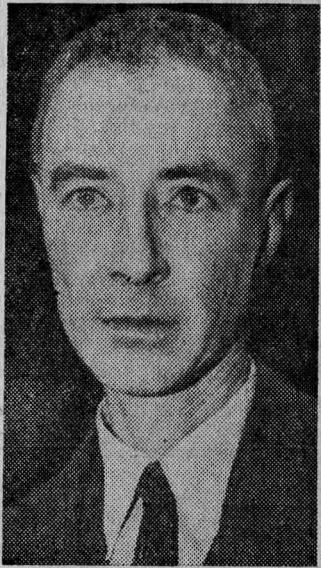
To the relief of the Administration, the announcement was greeted with general silence in political quarters. There were a few critical Republican comments, but nothing indicating that the award would provoke a serious political attack on the Administration.

Within the last two days the commission, on behalf of the White House, has sent out invitations to certain members of Congress to attend the Dec. 2 ceremony. The original plan called for a noontime ceremony at the White House, followed by a luncheon at the Statler Hotel in honor of Dr. Oppenheimer. The commission informed Congressmen today that the White House ceremony will be held late in the afternoon, followed by a reception at the National Academy of Sciences.

The award will come almost exactly ten years after President Dwight D. Eisenhower ordered that "a blank wall be placed between Dr. Oppenheimer and secret data" pending a security review. Six months later, the A.E.C. found Dr. Oppenheimer a security risk and ordered that his security clearance not be reinstated.

Even before the Eisenhower Administration left office, a move was under way within the Government to reverse the security decision or to take some action that would symbolically clear Dr. Oppenheimer's name.

The approach finally decided upon by the Administration to vindicate Dr. Oppenheimer was to give him the award created in 1954 in honor of the late Dr. Enrico Fermi, the Italian-born scientist who directed the team that achieved the first self-sus-



Associated Press

**Dr. J. Robert Oppenheimer**

tained chain reaction in a nuclear reactor.

The award is being given to Dr. Oppenheimer "in recognition of his outstanding contributions to theoretical physics and his scientific and administrative leadership not only in the development of the atomic bomb, but also in establishing the groundwork for the many peaceful applications of atomic energy."

During World War II, Dr. Oppenheimer was scientific director in the Manhattan Project, which developed the atomic bomb. He is director of the Institute for Advanced Study in Princeton, N. J.

11/4/65  
THE NEW YORK TIMES, SUNDAY

## BOOK PUBLISHERS BACKED IN BRITAIN

### Price-Setting Agreement Is Supported by Court

Special to The New York Times

LONDON, Oct. 31—Britain's book publishers were breathing easier today after their 61-year-old price-setting agreement was vindicated in court.

The Restrictive Practices Court, in a ruling that the publishers considered crucial to their industry, said after a five-week court case that the agreement was in the public's interest.

The court decided that to do away with the Net Book Agreement, devised in 1890 by Prime Minister Macmillan's uncle, Sir Frederick Macmillan, and accepted in 1901, would harm the public in three ways.

It would result in fewer bookshops, drive the general level of prices up and mean few published titles, the court said.

Fittingly, a 130,000-word book made up of opening statements, proofs of evidence and the court's ruling will be published in the next few months, probably by Macmillan.

The Net Book Agreement was drawn up to give stability and discipline to a trade hit by intense 19th-century competition.

It is an agreement among British publishers enforcing certain minimum prices for the retail sale of their books. About 90 per cent of the 18,000 new titles published each year are "net books." They account for three quarters of the publishers' turnover, the rest being school books sold in bulk.

The Government, represented by the Registrar of Restrictive Trade Practices, said that books were no different from any other product. The public, he said, was best served if the product was allowed to find its own price.

In its ruling yesterday, the court disagreed. Books were different in two ways: no two literary works were the same in the way two eggs were and the production and marketing of books also set them apart. No new book, for example, could be recognized as an improvement in the way new tools or drugs could be, the court said.

The court also said that publishers were faced with many hazards. One well-known publisher, it reported, found it impossible after 10 years to make a profit on new books alone, and publishers with numerous titles, such as the Oxford University Press, which has 15,000 copies in print at one time, found watching their progress a major problem.

### Institute for Crippled Elects a New Trustee



Samuel D. Leidesdorf

The Institute for the Crippled and Disabled has elected Samuel D. Leidesdorf as a trustee. He is a founding partner of the certified public accountancy concern bearing his name.

The institute is affiliated with New York University, where Mr. Leidesdorf is a trustee and chairman of the board of the New York University Medical Center. The institute and the university conduct joint programs of rehabilitation research, teaching and service to disabled persons.

Mr. Leidesdorf has received many honors and awards for accomplishment in business and in medicine, science, research, relief, welfare, civic and national improvement, and in activities serving the youth of the nation.

OPEN THURSDAY