

Mineral Industries

School of Mineral Industries

VOLUME 18

NUMBER 7



The
Pennsylvania State College

STATE COLLEGE, PA., APRIL, 1949

Mineral Sciences Cornerstone Prelude to Dedication Ceremonies

Cornerstone Exercises for the Mineral Sciences Building were held on Friday, March 25, 1949. The building, authorized under Governor James H. Duff's postwar building program, is about 50 percent completed. It will include facilities for instruction in geophysics, geochemistry, geography, mineral economics, steel making, coal processing, mineral beneficiation, as well as offices for the Mineral Industries Experiment Station and the Mineral Industries Extension Services. It is the initial unit in the projected additions to the Mineral Industries group to provide for education and research in the earth sciences and in the mineral extractive and mineral utilizing industries of the Commonwealth.

About 400 students, faculty, and friends of the School attended the Cornerstone Exercises. President Milholland repre-

sented the College; Dean Steidle, the School; Admiral W. W. Behrens, Deputy Secretary, State Department of Property and Supplies, the Commonwealth of Pennsylvania; and J. B. Morrow, First Vice-President, Pittsburgh Consolidation Coal Company and President, Bituminous Coal Research, Inc., represented the mineral industries. Mr. Morrow's address was read by Edgar C. Weichel, Vice-president and General Manager, Hudson Coal Company, and member, College Board of Trustees. President Milholland, Dean Steidle, and Admiral Behrens laid mortar for the cornerstone with a stainless steel trowel that will be appropriately engraved and placed in the Mineral Industries Museum.

Members of the Board of Trustees in attendance at the exercises in addition to Mr. Weichel were George H. Deike, Presi-

dent, Mine Safety Appliances Company, Pittsburgh; Roger W. Rowland, President, New Castle Refractories Company, New Castle; Howard J. Lamade, Secretary-Treasurer, Grit Publishing Company, Williamsport; and Kenzie S. Bagshaw, Hollidaysburg. The Commonwealth was also represented by H. O. Meyner, Resident Engineer, Bureau of Engineering Construction, State Department of Property and Supplies. State Senator A. H. Letzler, Clearfield, took an active part in the exercises.

The State Department of Mines was represented by W. Garfield Thomas, Deputy, Secretary of Mines for the Bituminous District, and C. H. Maize, Mine Inspector of the 20th Bituminous District. W. P. Johnson, Sr., and W. P. Johnson, Jr., of Johnson and Johnson, Architects, Erie, Pennsylvania, who designed the building, and Mr. Schilbred and Leo Payne, Job Superintendent, representing Henry E. Baton, Incorporated, Philadelphia, contractor for the building, took part in the ceremonies.

Members of the Mineral Industries Educational Advisory Committee who attended the exercises were G. J. Hanks, President, South Penn Oil Company; Lester Thomas, International Representative, United Mine Workers of America; C. F. Pogacar, Mellon Institute of Industrial Research; D. P. Hartson, Vice-President and General Manager, Equitable Gas Company; James Marks, President of District 5, United Mine Workers of America; D. S. Keenan, President, Carnegie Natural Gas Company, S. M. Vockel, President Waverly Oil Works Company; and E. H. Fritz, Vice-President, Stupakoff Ceramic & Manufacturing Company. Congratulatory messages were received from Richard Maize, Secretary of Mines, and Chairman of the Committee; Donald Markle, President, Jeddo-Highland



Mineral Sciences Building as of March 25, 1949.

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Mineral Industries

Published monthly by the School of Mineral Industries from October to May inclusive

The Pennsylvania State College

Mineral Industries Extension Services
D. C. JONES, Director

Pennsylvania's School of Mineral Industries and Experiment Station

Dedicated to education in mineral conservation and research by which the means may be found to make conservation effective. This includes diligent search for mineral truths and the energetic discovery, maximum recovery, and complete utilization of irreplaceable mineral resources.

FIELDS OF WORK Geotechnology

Earth Sciences: Geology, Mineralogy, Geophysics, Geochemistry, Meteorology, and Geography. **Mineral Engineering:** Mineral Economics, Mining, Mineral Preparation, and Petroleum and Natural Gas. **Mineral Technology:** Fuel Technology, Metallurgy, and Ceramics.

DIVISIONS OF SERVICE

Resident Instruction
Extension Instruction
Correspondence Instruction
Mineral Industries Research

Entered as second-class matter at State College, Pa., November 1, 1938, under the Act of August 24, 1912.

APRIL, 1949

TRENDS AND OBJECTIVES

By Dean Edward Steidle

HUMAN RESOURCES

(Fourth in a series of editorials constituting "A Philosophy for Conservation"—a phase of higher education in the mineral arts and sciences)

Thus far virtually the sole theme of the conservationist has been the preservation of natural resources. Little thought has been devoted to the conservation of America's most significant asset—her people. True, considerable effort has been devoted to conserving man's physical strength by the invention and application of labor-saving machinery. Notable progress has been made also in the conservation of man's health through important discoveries in medicine. However, little if any positive success has been achieved in the conservation of the most valuable attributes of man—intellect, skills, manpower.

Human resources are interrelated and interdependent. There is no monopoly on knowledge or skills or human energy. No one must sell them short. All the knowledge and all the skills and all the energy



President James Milholland speaks at Cornerstone Exercises.

possessed by all men are required to render all the services needed by all men.

One of the major sources of wasted manpower is found in the nation's schools, with an educational system based on the outmoded theory of uniform education for all. Actually, if democracy means free initiative for the individual, and unlimited progress at the maximum rate of speed of which the individual is capable, then our public schools are not democratic institutions. In fact, the prevalent practice of uniform education borders on the communistic, since it is based on equal rewards (advancement in grade) for equivalent amounts of time devoted to a job (the school year), regardless of quality of work and ability to produce (learn). Results of such a system of education are to lower the intellectual curiosity of young people to a level well below the average capacity, for teaching must be pitched at such a level that only a bare minimum of the total student body fails to advance in numerical grade from year to year. The resulting waste of manpower among mentally superior students during their formative years is appalling. While the outstanding student should be progressing rapidly, he is forced instead to reduce his pace to that of the average or sub-average level of his class and pitch his rate of mental growth at the level of the near-moron.

In theory, the progressive education methods in some public schools should have removed the millstone of standardization by permitting students of superior ability unfettered opportunity to develop latent talents. In actual practice, as applied in some schools, progressive education has resulted in a class of students frequently ignorant of discipline and devoid of competence in even the rudimen-

tary skills—arithmetic, writing, geography, reading—the foundation of all advanced training. At least the standardized product of former years could add, subtract, punctuate, spell, and alphabetize. While the opportunities for individual development have improved under the modern nonstandardized system of training with its substitution of "free expression" and "personality development" for the old-fashioned rote memory and drill work, the old stimuli for advancement—the honor of being at the top of the class or, conversely, direct social and physical coercion by parents and teacher—are weakened or lacking. And today's children, like most adults, will follow the path of least resistance in their academic work unless directed along other channels. Too many lose the persistence and intellectual curiosity of youth.

Even more appalling, however, than the poor use of manpower within the schools are the effects of such early training on students entering fields of higher learning. All too often, by the time the superior student begins his collegiate career, he has never learned how to study and has developed habits of mental laziness that are difficult or impossible to erase. So he runs along in second gear, content to pass through college with a minimum of mental exertion.

The grass roots of democracy are in the home. Secondary schools, quite justifiably, point to preparation for citizenship rather than for higher education. High school graduates are supposed to be eligible for college; but half of them do not have the necessary mental capacity, nor can they meet requirements for technical curricula. College board or well-conceived comprehensive examinations should be used as exacting yardsticks of

mental capacity and preparation for college. The first two years of higher education should consist of basic training; first, some mathematics, physics, chemistry, and English; second, some work in geology, botany, biology, and geography; third, some integrated humanistic-social courses—resulting in discipline in thought and flexibility in deed. Professional schools would impose a superstructure upon this foundation, and students would work at full capacity. The plan would liberalize some curricula, now liberal only in words, eliminate some fraudulent courses, and reduce the number of stillborn degrees, including masters' and doctors' degrees.

Higher education has become overspecialized. Some concentrate more and more on less and less. There are too many divisions, too many departments, too many little fields of knowledge, and above all too much competition between schools, functions, and departments. Conservation of human resources needs more pedagogy and less tinsel trimming.

Higher education is criticized because it fails to produce leaders out of poor raw material. Excellent reports—from Harvard, Princeton—have been published on postwar educational needs. Liberal arts committees have proposed revisions in organization as well as in subject-matter requirements. But egoisms hold the line and little happens. The report of the President's Commission on Higher Education places little emphasis on the need for maintaining high academic standards in colleges, does not explain the economy that will provide jobs for all college graduates, ignores the training of young men who are needed to fill gaps in industry following high school, fails to mention educating young people into trades and skills—in short, it suggests no ways of conserving manpower. The sum total sounds like glorified high schools in terms of the melting pot of the early nineties.

There is greater need now than ever before for higher education under the terms of the organic Land-Grant Act. Land-grant institutions should study their individual problems and arrive at a solution to these first. It is all right to consult and cooperate, but to attempt to fix a scheme into which all should fit would be fatal. After all, the Act is a heritage, not a convenience.

Let us now examine the manner in which colleges and universities conserve their basic assets—the minds and skills of their faculties. It is not far from correct to state that today, in America, the prestige of the majority of universities in the popular mind (and in the minds of many who should know better) is measured in large degree by the number, size, and



Dean Edward Steidle represents School.

splendor of their buildings; the size of their student bodies; the rank of their athletic teams; the size of their endowments; the number of books in their libraries; and other similar criteria. Low on the list of standards for judgment is the mental quality of their academic staffs. Consequently, it is not surprising to see the average university making strenuous efforts to accommodate all would-be students; nor is it remarkable that vast sums of money are being devoted to construction of new athletic fields, and buildings where the harassed undergraduate can find surcease from the cares and troubles of college life amidst expensive trappings. Simultaneously, and on the same campus, the heart and soul of the university, its staff, is forced to work amidst conditions that, to say the least, are not conducive to the maximum utilization of a free and unfettered mind. Colleges must provide that physical solitude and quiet that is so fundamental for true scholarly, constructive thought, with academic freedom. An excessive teaching load, with the innumerable interruptions associated with too many class hours and too many students per class, together with nonproductive committee meetings and reports, plague the scholar with so many nonintellectual duties that time for mental pioneering and creative effort is drastically reduced or nonexistent. Sometimes inadequate salaries, incommensurate with the status and caliber of work being performed, disturb that financial peace of mind which is so essential to scholarly work.

In view of the above, the question might well be raised: Is true conservation being practiced in the one basic human resource in our colleges and universities? Or are institutions of higher learning, by taking on all comers as students and devoting their dollars to tricks instead of brains,

wasting the best minds of the nation? How much farther might the intellectual horizon have been advanced today if more consideration had been given the lowly professor and less thought and effort devoted to outward symbolisms of higher education!

One need seek no further than the days before Columbus to find strikingly demonstrated the inability of man to employ his physical legacies. Coal, iron ore, petroleum, water power, and a host of other assets that are vital present-day needs were at the disposal of the early Indians in quantities in excess of those available today. But lack of mental advancement among the aboriginal population prevented their utilization, and their value to the natives was no more than that of any other worthless bit of Nature. Today, solely because of man's mental advance, such resources have become invaluable.

A question arises naturally from the above sequence of thoughts. If man has achieved his present goals in the employment of environmental assets under the handicaps of mental retardation spawned in the public schools and colleges (industry, government, and the armed forces are no exceptions), how much more advanced could we have been today if man's unfettered mind had been given full and unretarded rein to develop and grow? Manpower is an expendable resource. Every day of inefficient use of brain and hands is a day that is lost forever; it cannot be recovered at some future time. Furthermore, the results of wasted manpower are cumulative. For when mental achievement is retarded one day, the springboard for progress on the next day is set that much lower. When in doubt, do something intelligent.



E. C. Weichel presents address of J. B. Morrow and telegram of Secretary Maize.

SECRETARY OF MINES TELEGRAM

Harrisburg, Pa.
March 25, 1949

Dean Edward Steidle
School of Mineral Industries
State College, Pennsylvania

Regret very much inability to be present on this momentous occasion. Sincerely hope the laying of this cornerstone is just one step in a building program and will place Pennsylvania's School of Mineral Industries and their mechanic arts far beyond anything ever expected to be attained by any other college. It is my earnest wish that those present will resolve to exercise every effort to see that original plans for present building are finally carried out. Wish for you and the College continued success in developing the mineral industries of this great Commonwealth.

Richard Maize
Secretary of Mines and
Member of Board of Trustees

Mineral Sciences Cornerstone

(Continued from page one)

Coal Company; Walter A. Jones, Executive Secretary, Central Pennsylvania Coal Producers Association; Harry A. Sutter, Executive Vice-President, Western Pennsylvania Coal Operators Association; J. N. Hoffman, President, Structural Slate Company; John Wusels, District 5, United Mine Workers of America; and D. M. Horner, Vice-President, Harrisburg Steel Corporation.

The Mineral Sciences cornerstone laying exercises represented the third exercises of the afternoon on the campus, being preceded by exercises at the Plant Industries Building and at Willard Hall, a general classroom building.



Admiral W. W. Behrens lays mortar for cornerstone.

ADDRESS OF PRESIDENT MILHOLLAND

On October 4, 1890, the Executive Committee of the College established a curriculum in mining engineering, and in 1893 a special State appropriation provided for a Department of Mining Engineering. This department was included under the School of Mines in 1896, when School units were first organized on the campus.

Throughout the early years, service had been given without adequate facilities. In 1891 the Legislature enacted laws for erecting and equipping a building for the mechanic arts, including mining engineering. A few years later an old wooden pumphouse, roofed with tar paper, was moved to the site of the present Power Plant; and this housed the mineral industries work. In 1905 Andrew Carnegie donated \$5,000 for a wooden addition to the pumphouse. Ten years later a special

State appropriation of \$35,000 was made to construct one wing of a Mining Building—the building which now houses Textile Chemistry. Finally, in 1930 State funds were made available for the Mineral Industries Building. A central wing was added in 1937 under the General State Authority.

Since 1930 the number of curricula has grown from 4 to 11, undergraduate enrollment has tripled, enrollment in service courses for other schools has doubled, and extension training has tripled. Graduate work and research have grown until there are now 120 graduate students and 100 research projects supported by state appropriations and by federal and industrial grants. During the past twenty years the staff of the School has grown from 15 to 185 members.

Today we mark one more milestone in the progress of Penn State toward our goal of giving maximum service to the citizens of this Commonwealth. The Mineral Sciences Building will be devoted to further study of the discovery, extraction, beneficiation, processing, utilization, and conservation of minerals; and to the dissemination of such information to the people of the State. Office space will be available for the Experiment Station and Extension Services and laboratory space for the Divisions of Geochemistry, Geophysics, Geography, Mineral Economics, Mineral Preparation, as well as special laboratories for coal processing and steel making.

This building, the new classroom building, and the Plant Industries Building bring us one step nearer to our dream of

a greater Penn State—a dream shared by students, alumni, and faculty.

In placing this cornerstone, we hereby dedicate this structure to the advancement of science and to the welfare of our present and future citizens.

ADDRESS OF DEAN STEIDLE

The College will soon celebrate its centennial. The hundred years since its founding have brought the greatest improvement in living standards known in human history, and this improvement has been made possible by an increasing use of minerals.

Today we lay the cornerstone for the first unit of the second building of the mineral industries group dedicated to those noble purposes. Since minerals are an indispensable basic ingredient of our present economy, this Nation's world leadership—and perhaps even its survival—depends upon a constantly expanding mineral production. Pennsylvania still ranks first as a producer and processor of minerals, but we are facing a dangerous depletion of our reserves. Providence endowed us with bountiful resources, and our citizens created techniques for extracting minerals from the earth and converting them into forms useful to man.

I cannot give too much credit to my predecessors who struggled against many obstacles—lack of public support, lack of interest, lack of appreciation of the stupendous role minerals would play in the development of giant industries and in wars of unprecedented fury, waste, and horror. But those pioneers saw the possibilities which lay ahead; they laid the foundation upon which we have built.

The unknown future will bring unknown problems. The manner in which we use this new building may decide the fate of our children and grandchildren. Our major responsibility is to maintain the leadership of the Commonwealth of Pennsylvania in the mineral kingdom. This is no selfish objective; it is an acceptance of the responsibility bestowed on us by the Providence which provided our rich and diverse mineral heritage.

We must go forward—or we shall go back to economic insecurity, to lower living standards, and to the social dislocations that come with a declining economy. We must use our irreplaceable resources without exhausting them. With new scientific tools, we can preserve their usefulness for centuries to come.

Our first need is trained men—men with the desire to educate themselves; men who appreciate the value of knowledge; men able to assemble the necessary information and analyze it, to find its significance, to apply their knowledge. Our

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Roger W. Rowland, '17, Toastmaster at the Banquet.



President James Milholland addresses the Banquet.



Remarks by Senator A. H. Letzler

Mineral Industries Banquet

Dr. L. E. Young, president, American Institute of Mining and Metallurgical Engineers and a graduate of the College, class of 1900, gave the principal address at the Eleventh Annual Mineral Industries Banquet which followed Cornerstone Laying Exercises, at the Nittany Lion Inn. There were 230 students, faculty members, and guests of the School in attendance. Dr. Young discussed the fourth point in President Truman's inaugural address under the title "Mineral Industries Education and Technical Aid to Backward Countries." From his wide experience as a consulting mining engineer, educator, and industrialist, and from his extensive travel in foreign countries, Dr. Young presented views as to how such aid should be provided without imposing difficult standards of living or restrictions that would be unworkable under the existing conditions. The address is being prepared in article form and will appear in a subsequent issue of MINERAL INDUSTRIES.

Immediately following the dinner, group singing was led by D. C. Jones, accompanied by Alan Meldrum, pianist. George M. Mitchell, senior, representing the student organizations sponsoring the banquet, introduced the toastmaster, Roger W. Rowland. President Milholland spoke briefly on mineral industries education. Senator Letzler congratulated the School on the addition to its physical plant and expressed pleasure at the evidence of proper stewardship of Commonwealth funds at the College. Dean Steidle read the "Dean's List"—32 undergraduates with an average of 2.50 or better (one student had a straight 3.0 average).

Richard M. Smith, senior ceramic student, presented a certificate of honorary membership in Keramos, national ceramic honorary society, to Mr. Rowland. Keramos, installed at the College in December, 1948, has an undergraduate membership of approximately 25. Mr. Rowland is the first person granted an honorary membership by the local group. This honor is reserved for persons whose achievements in the ceramic industry are outstanding.

George H. Deike, '03, presented in behalf of the "Old Timers" Club a watch to Allen D. Gray, Jr., a February, 1949, graduate in mining engineering, now employed by the Rochester and Pittsburgh Coal Company, Indiana, Pa. The presentation, an annual feature in seven or eight of the leading universities and colleges where mining engineering is taught, is an award of the Club to the outstanding senior miner at each institution. Members of the Club, which was started 20 years ago by a group of mining engineers interested in safety and educational movements, now number 25, about one-fifth being Penn State graduates. The group hopes that

such awards will help to inspire young men to enter the mining engineering profession and will help to improve conditions in coal mining.

Music during the dinner was furnished by the Jeannette C. Wisden Quartette, a string ensemble group from the College staff.

Dr. John E. Allen of the faculty prepared a special song for the occasion which is given below:

THERE'S A SCHOOL

(Artillery Song)

There's a school that's a jewel
Though with classes plenty cruel,
For it gives what it takes to lick them all!
There we get MET. and PET.,
And we learn the rest you bet.
For it gives what it takes to lick them all!
Then it's M. I. School, and Dean Steidle,
too,

Shout out our praises through the hall,
Wherever we go, we will always know
We've a training, that's better than all!
(Keep on plugging!)

We've a training, that's better than all!

J. E. Allen, 1949.



Dr. L. E. Young, '00, principal speaker.

DEAN STEIDLE

(Continued from page five)

need is research techniques—techniques which are remaking the world in a pattern our ancestors would never recognize. The path of progress begins with ideas and theories and moves forward from laboratory tests to use in industry—until finally the results are evident in our own homes. Here we must investigate the evidence visible in nature and attempt to discover fundamental truths that will preserve our American way of life.

ADDRESS OF J. B. MORROW*

It is indeed an honor to represent the mineral industries on this occasion.

The Pennsylvania State College has long recognized the need for close contact with the mineral industries, and the furtherance of its functions of education and research. The mineral industries, on the other hand, have appreciated the helping hand extended by the College in the form of men educated in the various phases of these industries, and in the form of research cooperation in all fields of these industries.

The past twenty years have been marked by a fine spirit of cooperation between the College and the various mineral industries associations representing Coal, Oil, Natural Gas, Steel, Ceramics, and by many individual companies. This cooperation, which has been accompanied by many conferences and meetings, attended by faculty and industrial representatives of both management and labor, at which problems of mutual interest were discussed, has been of very great benefit to industry as a whole, and we trust it has also helped to fulfill the objectives of the School of Mineral Industries.

The mineral industries supply the principal sources of employment, as well as of revenue, in Pennsylvania. The prosperity of the entire State is in a large measure dependent upon the prosperity of the mineral industries. The financial returns of the mineral industries affect the whole Commonwealth, and can result in unfortunate shifts of population and migration of capital. The war years plainly showed the importance of education and research in the life of the Nation and of the State. We must remember that we have been a wasteful people. Much of the cream of our mineral resources has vanished in a relatively short space of time, and it is going to require a much higher degree of technologic and engineering skill to make the most effective use of the resources that are left to us. For instance, in the early days of the Connellsville Coal Field, with the Beehive Ovens, it was possible to operate with a minimum amount of engineering skill, but the types of coal that are left require vastly more research and a higher degree of technology in its mining, preparation and carbonization. More than ever we need research pointing to new methods and new practices, so that full employment may continue in this great Commonwealth.

This new building—the Mineral Sciences Building—in a sense is a reward for

* Vice President, Pittsburgh Consolidation Coal Company and President, Bituminous Coal Research, Inc.

the accomplishments of the past, but more than that—it is an opportunity, a challenge for the future. We have every confidence that with the continued cooperation of the College and of industry, that this challenge will be successfully met.

ADDRESS OF ADMIRAL BEHRENS*

I feel honored to have been invited to represent the Commonwealth at the cornerstone laying ceremonies for the Plant Industries, Willard Hall, and Mineral Sciences Buildings. These are three of a large number of buildings that the Commonwealth is erecting throughout Pennsylvania for the purpose of building human resources for the training of leaders and progress and conservation of material resources.

I take personal pride in my part in this ceremony, and I am glad to see actually under construction on this campus three important projects of the Bureau of Engineering and Construction.

I feel sure that the people who are here today for the ceremonies will be interested to know that a great many other buildings are being erected in this State to rehabilitate unfortunates of this and other generations. By far the biggest part of the State building program is the construction and improvement of institutions for mental patients, under the Department of Welfare.

When James H. Duff completes his four-year term as Governor in January of 1951 he will have done more to build up the mental hospitals and various other buildings and installations of the Commonwealth than any of his thirty-three predecessors. And in that respect he will have done more than any Governor of any other State in an equal period of time.

Governor Duff's extensive building program is not merely something that is planned for the future, but, as you can see, something that actually is already in effect. The Governor, through current projects, is carrying forward a program that is modernizing the vast physical plant—hundreds of buildings throughout Pennsylvania—in which the activities of State government are carried on. And ex-

* Deputy Secretary, State Department of Property and Supplies.

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Dean Steidle presents the "Dean's List."



Richard C. Smith, senior ceramic student, presents Mr. Rowland with certificate of honorary membership in Keramos.



George H. Deike presents a watch on behalf of "Old Timers" Club to Allen D. Gray, Jr., for outstanding scholarship in mining engineering.

Records Placed In Cornerstone of M. S. Building

The Records Cover the Development of the School of Mineral Industries Since the Cornerstone Was Laid for the Mineral Industries Building on January 4, 1930. The latter cornerstone contained records of the development of the School from 1855 to 1930.

1. Illustrated booklet, Penn State and the Future of Pennsylvania.
2. General College Catalogue 1949-50.
3. Announcement of the Graduate School 1949-50.
4. Directory, Graduates of the School of Mineral Industries 1946.
5. Circular 17, Careers and Mineral Industries, autographed by Dean Edward Steidle.
6. Circular 20, Mineral Industries Research, autographed by Dr. A. W. Gauger, Director, Mineral Industries Experiment Station.
7. Circular 26, Mineral Industries Extension Services, autographed by Professor H. B. Northrup, Director 1931-47; and Professor D. C. Jones, Director 1947 to date, Mineral Industries Extension Services.
8. Circular 29 (reprint, The Compass of Sigma Gamma Epsilon, May 1948), School of Mineral Industries, The Pennsylvania State College.
9. Bulletin 46, Progress in Research, Biennium 1945-47.
10. Circular 30, Extension and Correspondence Instruction 1949.
11. Pennsylvania's Mineral Heritage, autographed by William S. Livengood, Jr., Secretary, and G. M. Steinmetz, editor, Department of Internal Affairs.
12. Pennsylvania and Your Industry, autographed by Raymond H. Smith, Deputy Secretary, Department of Commerce.
13. The Pennsylvania State College Bulletin, To Promote Liberal and Practical Education.
14. Autographed photograph of the Honorable Richard Maize, Secretary of Mines.
15. Mineral Industries, February, 1945, The Earth Sciences—An Organic Unit; April 1945, Mineral Engineering—An Organic Unit; January 1946, Mineral Technology—An Organic Unit.
16. Mineral Industries, May 1948, Official announcement of acceptance of bid of \$1,006,361.17 for construction only of the first unit of the Mineral Sciences Building of the Mineral Industries Group.
17. Mineral Industries, March 1949, The Penn State Polyolith.
18. Program for Formal Opening exercises, Mineral Industries Art Gallery, March 30, 1942; and Mineral Industries, March 1937, Mineral Industries Art Gallery.
19. Circular 31, Roots of Human Progress; and Circular 33, A Philosophy for Conservation.
20. Senate Bill 364 Session 1949, covering proposed College maintenance appropriation for the new biennium.
21. Photograph of the Executive Committee of the School of Mineral Industries, Dean Steidle, Dr. Gauger, Professor Jones, Dr. Woldemar Weyl, Dr. E. F. Osborn, Professor D. R. Mitchell, and Daisy M. Rowe.
22. Autographed photograph of Daisy M. Rowe, Secretary to the Dean, oldest member of the staff of the School in point of service—27 years.
23. Set of statements, sample of technical paper appended, by division chiefs defining the modern conception of subject matter fields; geology, Dr. F. M. Swartz; mineralogy, Dr. P. D. Krynine; geophysics, Professor L. O. Bacon; geochemistry, Dr. E. F. Osborn; meteorology, Dr. Hans Neuberger; geography, Dr. E. W. Miller; mineral economics, Dr. W. M. Myers; mining, Professor A. W. Asman; mineral preparation, Professor R. E. Zimmerman; petroleum and natural gas, Dr. S. T. Yuster; fuel technology, Dr. C. C. Wright; metallurgy, Dr. H. J. Read; ceramics, Dr. E. C. Henry.
24. Set of statements by respective current presidents of School honorary and student societies; American Ceramic Society, L. D. Alspach; American Society for Metals, J. H. Keeler; Earth Science Club, Arthur Jaffe; Keramos, R. M. Smith; Mining Society, R. K. Fisher; Petroleum Engineering Society, N. D. Altemus; Sigma Epsilon Sigma, Mary V. Black; Sigma Gamma Epsilon, G. M. Mitchell.
25. Copies of the addresses of President James Milholland, Dean Edward Steidle, and Mr. J. B. Morrow, First Vice President of Pittsburgh Consolidation Coal Company and President, Bituminous Coal Research, Inc., 4:10 p. m., Friday, March 25, 1949.
26. Program for the Eleventh Annual M. I. Banquet held in conjunction with Cornerstone Laying Exercises.
27. Sets of fragments of Pennsylvania minerals (1) symbolic of mineral resources of today, (2) symbolic of potential mineral resources of tomorrow.

GEOLOGY

Dr. Frank M. Swartz, Chief of the Division of Geology, attended meetings of the American Association of Petroleum Geologists held in St. Louis, Missouri, March 14-17, 1949. He participated in a symposium on "Control of Petroleum Accumulation by Sedimentary Facies," contributing a paper on "Facies Background of Appalachian Accumulation." He also attended the Association field trip, covering the area from St. Louis to the east flanks of the Ozarks and to Cape Girardeau, seeing and collecting samples from westerly, changing extensions of Appalachian strata.

ADMIRAL BEHRENS

(Continued from page seven)

trremely important in the over-all program are these college buildings.

All these improvements are contributing to the attainment of Governor Duff's objective—"to develop and carry forward a program beneficial to all the people of this Commonwealth."