

Charles E. Wier

INDIANA UNIVERSITY
DEPARTMENT OF GEOLOGY

GEOLOGY NEWS LETTER NO. 4

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INDIANA UNIVERSITY

DEPARTMENT OF GEOLOGY

NEWS LETTER NO. 4

W. D. Thornbury, Editor

Contributors

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C. F. Deiss

R. E. Esarey

J. J. Galloway

D. E. Hattin

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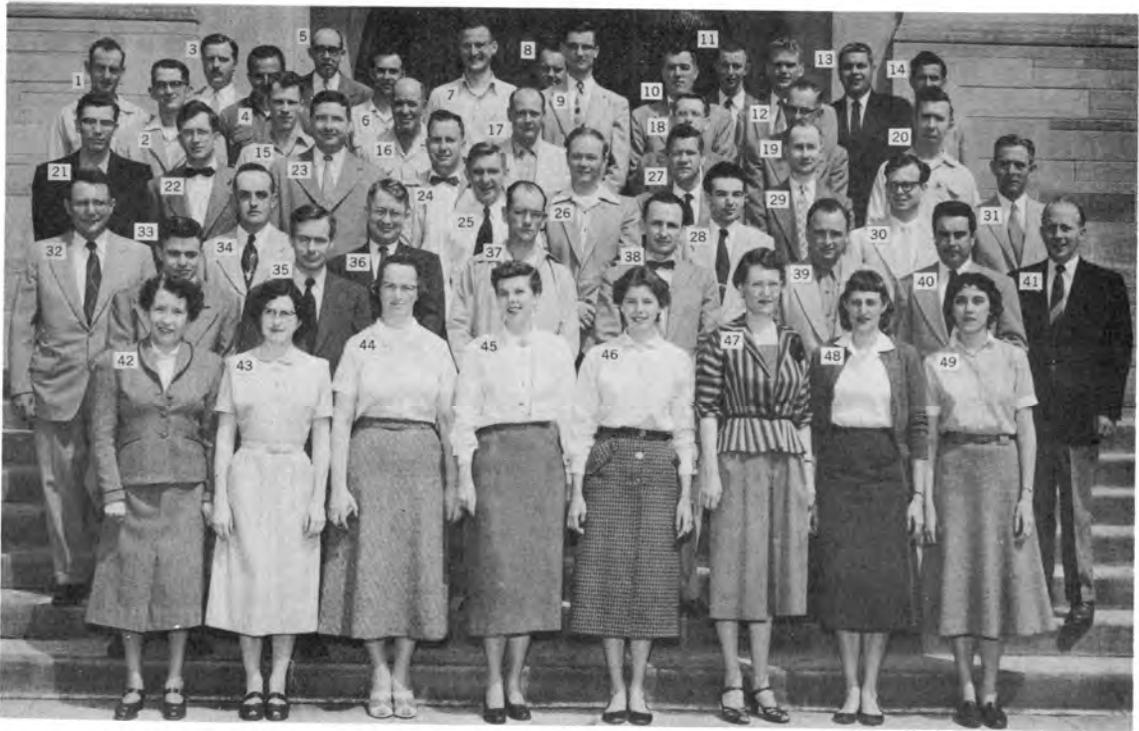
J. B. Patton

T. G. Perry

Larry Rooney

Bloomington, Indiana

May 1955



Members of Indiana Geological Survey Staff

1-Aynes, 2-Sears, 3-Patton, 4-Hunter, 5-Dawson, 6-Craig, 7-L.Miller, 8-C.Miller, 9-Conley, 10-Murray, 11-Brookley, 12-Pinsak, 13-Sullivan, 14-Gutstadt, 15-Bundy, 16-Robinson, 17-Whaley, 18-Woodard, 19-Hickam, 20-Coller, 21-J.Smith, 22-Gray, 23-Biggs, 24-McGregor, 25-Blakely, 26-Wayne, 27-Guennel, 28-Friedman, 29-Hreha, 30-Holt, 31-Appleton, 32-Deiss, 33-Greenburg, 34-Moran, 35-Leininger, 36-N.Smith, 37-Peace, 38-Wier, 39-Hutchinson, 40-Carpenter, 41-Keller, 42-Banfill, 43-M.Smith, 44-Butcher, 45-Parsons, 46-Voland, 47-Fox, 48-Dooley, 49-Heisterkamp.



Group at I. U. luncheon at A. A. P. G. meeting in New York, 1955

Standing (left to right)
 Patton, Reeves, Bradfield, Esarey, Armstrong (Exec. Dir. Ind. Univ. Foundation), Dawson, Hiestand, F. Schweers.
 Seated (left to right)
 R. Schweers, Fidiar, Thomas, Bartle, Mrs. Bartle, Galloway, Waters, Kline, Sullivan, Murray, Mauck.

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GREETINGS TO ALUMNI

Charles F. Deiss

Here is your fourth annual GEOLOGY NEWS LETTER and it gives me the opportunity again to send these greetings to all graduates of this Department. As many of you enjoyed the photographs in the last NEWS LETTER, we are including new ones in this issue. One photograph shows the alumni at the geo-luncheon table in the Village Room of the Statler Hotel on March 29, 1955. If your face does not appear in this picture and if you are helping to find or produce oil, why don't you help "swell" next year's photograph which we shall take of the alumni luncheon at A.A.P.G. The photograph of the State Geological Survey Staff may help you to realize how important an organization it has become.

The stability of our post-war faculty is evidenced by the fact they are taking sabbatical leaves in ever larger numbers each year. This year Professor Charles Vitaliano and family are in New Zealand and en route around the world. Ralph Esarey also is spending part of his sabbatical this semester studying the oil fields in Venezuela.

Our courses in petrology and petrography this semester are being taught by Professor Allan F. Wilson, who came to us from the University of Western Australia at Perth. In addition to his regular duties, Dr. Wilson is giving a series of seminar talks on various aspects of Australian ore deposits and on the use of petrology and structural geology in prospecting and developing such deposits in Australia. We are fortunate to have him with us this semester and shall miss him when he leaves.

Historical geology and stratigraphy are being taught by Donald E. Hattin, who replaced Assistant Professor R. E. Deane in September, 1954. In addition to teaching his courses, working with his graduate students, and improving the departmental collections, Dr. Hattin gave thirteen televised lectures on historical geology and the geologic history of Indiana. These lectures were televised on Channel 4 through Station WTTV of Bloomington and have done much to bring the Department to the attention of the television public.

In order to carry geology to young Hoosiers and to make the Department and University better known throughout the state, the geology faculty began a new program last spring. Individual faculty members have been talking before science classes in selected Indiana high schools. The response has been so enthusiastic that at times we could not supply speakers for all the requests. We hope this program will help us to interest more of the superior high school students into becoming professional geologists.

The overall quality of our geology majors and graduate students is improving each year. This is the first year that we have obtained all of the applicants to whom we offered fellowships and graduate assistantships. We had so many applicants for fellowships and graduate assistantships for the next academic year, that we already have notified fourteen of them that they could not be granted awards. In addition, two of our present graduate students, Jack L. Harrison and Lawrence F. Rooney, have been selected by the National Science Foundation as Fellows for 1955-56 for graduate study in geology at Indiana University. This year, also, is the first time the California Company has placed a fellowship at Indiana. The Company's confidence in your Geology Department is evidenced not only by the renewal and increase of the fellowship for next year from \$1200 to \$1500 plus fees, but also by the additional grant of \$750 to the Department for unrestricted use.

These are pleasant greetings, and I hope that you will enjoy this NEWS LETTER as much as the faculty has enjoyed writing it and sending it to you.

SENIOR TEACHING STAFF

Carl Wellington Beck, Professor of Mineralogy
 Charles Frederick Deiss, Chairman and Professor of Geology
 Ralph Emerson Esarey, Associate Professor of Geology (on
 leave second semester)
 Jesse James Galloway, Professor Emeritus of Geology and
 Paleontology
 Donald Edward Hattin, Assistant Professor of Geology
 Wayne Russell Lowell, Associate Professor of Geology
 Duncan J. McGregor, Assistant Professor of Geology
 Judson Mead, Associate Professor of Geophysics
 Haydn Herbert Murray, Associate Professor of Geology
 John Barratt Patton, Associate Professor of Geology
 Thomas Gregory Perry, Assistant Professor of Geology
 William David Thornbury, Associate Professor of Geology
 Charles Joseph Vitaliano, Associate Professor of Geology
 (on leave entire year)
 Allan Fraser Wilson, Visiting Associate Professor of Geology

JUNIOR TEACHING STAFF AND RESEARCH ASSISTANTS

Graduate Assistants

Bruce F. Bohor, A. B. Beloit College, 1953; home-Chicago, Ill.; assistant in Physical Geology. Bruce, now at the Univ. of Illinois, did a master's thesis under Haydn Murray on the petrology of Alleghenian underclays of Indiana.

Malcom Boyce, A. B. Colgate University, 1954; home-Cherry Valley, N. Y.; assistant in Historical Geology and Paleontology. Mal plans to complete his work for the A. M. degree under Tom Perry in February, 1956.

James B. Koenig, B. S. Brooklyn College, 1954; home-Brooklyn, N. Y.; assistant Petrology and Structural Geology. Jim is undertaking petrographic studies of eastern and western Kentucky dike rocks for his master's dissertation.

Victor K. Koskinen, A. B. Montana State University, 1949, M. S. Washington State, 1951; home-Butte, Montana; assistant in Geology and Man and Historical Geology. Vic's Ph.D. thesis, directed by Wayne Lowell, concerns the stratigraphy and sedimentation of the Colorado shale of the Kevin-Sunburst Dome, Montana.

Richard W. Larson, A. B. City College of New York, 1953; home-New York, N. Y.; assistant in Geology and Man. Dick completed his A. M. requirements in February, 1955. His thesis, supervised by Haydn Murray, is on the petrology of the Pennsylvanian Merom sandstone of Indiana.

George T. Moore, B. S. Notre Dame University, 1952, A. M. Indiana University, 1954; assistant in Metalliferous Mineral Deposits, Petrology, and Structural Geology. George's work on Montana phosphate deposits is under the supervision of Wayne Lowell.

Rosalia Rey, A. B. Indiana University, 1955; home-Bloomington, Indiana; assistant in Geology and Man. Buddy will study problems of the subsurface Borden (Mississippian) group in Indiana for her master's dissertation.

Lawrence F. Rooney, B. A. Montana State University, 1948, M. A. Montana State University, 1950; home-Whitefish, Montana, assistant in Mineralogy, Non-metals, and Field Geology. Larry's thesis on the Phosphoria formation of southwestern Montana is being supervised by Wayne Lowell.

Research Assistants

Wayne E. Fowler, A. B. Earlham College, 1951, A. M. Indiana University, 1953; home-Albany, Georgia; assistant to Dr. Lowell. Wayne will complete work for his Ph.D. degree in June, 1954. His thesis deals with the geology of the Trusty Lake Quartz Hill Gulch areas near Beaverhead, Montana.

James A. Noel, A. B. Lehigh University, 1949, A. M. Dartmouth, 1951; home-Williamstown, Pa.; assistant to Wayne Lowell. Jim's thesis problem is the areal geology at the Anaconda, Montana region.

Irwin S. Parrish, B. S. Brooklyn College, 1954; home-Brooklyn, N. Y.; research assistant to Carl Beck. He is doing his A. M. thesis on meteorites.

Paul C. Raymond, B. S. Notre Dame University, 1952; home-San Francisco, Calif.; assistant to Tom Perry. Paul plans to finish his work for the A. M. degree by June, 1955. His thesis is on the foraminifera fauna of the Osgood (Niagaran) formation at its type locality.

Charles B. Reynolds, B. S. New Mexico, 1953, M. S. New Mexico, 1954; home-Santa Fe, N. M.; assisting Carl Beck in mineralogical research. Chuck has taken a position with Standard of California and will begin work with them in June.

Fellows

Jack L. Harrison, B. S., Indiana University, 1954; home-South Bend Indiana. Jack holds the newly established California Company Fellowship. His thesis directed by Haydn Murray, concerns Lower Chester sedimentation in Indiana.

Alan S. Horowitz, A. B., Washington and Lee, 1952, M. S. Ohio State, 1954; home-Ashland, Kentucky. Al is studying the invertebrate fauna of the Glen Dean limestone in Indiana.

Joseph St. Jean, B. S., College of Puget Sound, 1949, A. M., Indiana University, 1953; home-Tacoma, Washington. Joe hopes to finish his thesis on Devonian stromatoporoids by September, 1954.

NON-ACADEMIC STAFFS

Department of Geology

Bernice M. Banfill, Administrative Assistant
Theodore H. Appleton, Accountant
Vigginia L. Crider, Secretary
Richard L. Snyder, Librarian
Ross Hickam, Preparator

State Geological Survey

Charles F. Deiss, State Geologist
John B. Patton, Principal Geologist
Mary Beth Fox, Mineral Statistician
Martha N. Smith, Secretary

Coal Section

Charles E. Wier, Geologist and Head
G. K. Guennel, Paleobotanist
S. A. Friedman, Geologist
Henry H. Gray, Geologist
Harold C. Hutchison, Geologist
Saralou Voland, Secretary

Geochemistry Section

Richard K. Leininger, Spectrographer and Head
Robert F. Conley, Spectrographer
Maynard E. Collier, Analytical Chemist
Louis V. Miller, Coal Chemist
Elmer N. Craig, Laboratory Technician

Geophysics Section

Maurice E. Biggs, Geophysicist
Judson Mead, Research Advisor
Robert F. Blakely, Geophysicist
Joseph F. Whaley, Geophysicist
Charles S. Miller, Instrument Maker
Raymond Robinson, Driller
Teddy Thomas Hunter, Assistant Driller
Arthur Wayne Aynes, Geophysics Technician

Glacial Geology Section

William J. Wayne, Geologist and Head
 William D. Thornbury, Research Advisor

Industrial Minerals Section

Duncan J. McGregor, Geologist and Head
 Haydn H. Murray, Clay Mineralogist
 Wayne M. Bundy, Petrographer
 Seymour Greenberg, Petrographer
 Arthur P. Pinsak, Geologist
 John M. Smith, Geologist
 Ned M. Smith, Geologist
 Ann Parsons, Secretary

Petroleum Section

Thomas A. Dawson, Geologist and Head
 Thomas G. Perry, Research Advisor
 Arthur Brookley, Paleontologist
 Gerald Carpenter, Geologist
 William Flanagan, Geologist
 Allan Gutstadt, Geologist
 Andrew Hreha, Geologist
 Stanley Keller, Geologist
 Samuel Riely, Geologist (on military leave)
 Dan Sullivan, Geologist
 Evert W. Christensen, Geologist
 Olin R. Holt, Geologist
 Ruth Butcher, Secretary and Curator of Files
 Ruth Dooley, Clerk-Typist

Publications Section

Gerald S. Woodard, Editor
 William H. Moran, Chief Draftsman
 Anita J. Heisterkamp, Draftsman
 John E. Peace, Draftsman
 Jack V. Sears, Draftsman
 George R. Ringer, Photographer

VISITING PROFESSOR

Dr. Allan F. Wilson, Senior Lecturer in Petrology in the University of Western Australia at Perth, Western Australia, is spending part of his year of sabbatical leave at Indiana University. He holds the position of Visiting Associate Professor of Petrology and replaces Dr. Charles Vitaliano, who is spending his sabbatical leave in New Zealand.

At Adelaide, Allan Wilson took his M.Sc. on the results of two expeditions he carried out in Central Australia, and his D.Sc. was awarded by the University of Western Australia on the published results of two other expeditions into the deserts. Although most of his published work deals with metamorphic and igneous petrology, his main interest is in the integration of petrology and structure as applied to economic problems in the gold mining areas of Western Australia. It is even whispered that he dares to suggest that the main value of fossils is to form nuclei for calc-silicate minerals in metamorphic rocks!

He came to this country on a Fulbright grant and will return to the Antipodes via Scandinavia, the Middle East, and India. His wife and three children remained in Australia.

FACULTY ACTIVITIES DURING SUMMER OF 1954

Carl Beck worked on the mineralogy of the pegmatites of the Petaca District, New Mexico during June and spent the remainder of the summer studying the mineralogy and petrology of Niagaran reefs in Indiana. The latter was undertaken as part of the summer field program of the Indiana Geological Survey.

Dr. Deiss visited our field camp in Montana during the early part of the summer and then returned to Bloomington to direct activities of the Survey, both office and field. He also attended geological conferences in several cities, including Omaha and Pittsburgh.

Ralph Esarey spent another summer as a member of the instructional staff at the Geologic Field Station in Montana.

J. J. Galloway, Head of the "Institute of Stromatoporology", continued his investigation of those remarkable organisms, the stromatoporoidea.

Don Hattin spent the summer in Wyoming where he was employed by The California Company. His work consisted of stratigraphic investigation of Cretaceous sections in several different areas.

Wayne Lowell continued his activities as director of the Geologic Field Station in Montana. Following field camp, he again pursued investigation of phosphate deposits in Montana for the Victor Chemical Company. In addition, he supervised the field work of several I.U. students who are doing theses in Montana.

Duncan McGregor undertook further field investigation of Indiana's mineral resources as part of the state survey summer field program. He also worked on the areal geologic mapping of Monroe County.

We have it on pretty good authority that Jud Mead spent a good part of the summer waterwitching with his various geophysical gadgets.

Haydn Murray spent the summer with the Indiana Geological Survey. During the season he completed a study of the clay materials found in the Pennsylvanian formations of Indiana.

John Patton, along with Tom Dawson, spent the summer examining Devonian and Silurian rocks of southern Indiana. John also administered the affairs of the Survey during the absence of Dr. Deiss.

Tom Perry, with the aid of Arthur C. Brookley, and under the auspices of the State Survey, roamed the hills of southwestern Indiana in quest of Chester fossils. During the last month of the season, Tom began studies on Osgood Bryozoans collected in 1953.

Bill Thornbury worked for the State Geological Survey mapping the areal geology of Tippecanoe County, Indiana and collected materials for a study of the till petrology of the area. Paul Raymond assisted Bill with this work.

Charles Vitaliano worked in the Shoshone Range of Nevada for the United States Geological Survey. Late summer found him preparing for a sabbatical leave trip to New Zealand under a Fulbright grant.

STUDENT ACTIVITIES DURING SUMMER OF 1954

Wayne E. Fowler, a candidate for the Ph.D. degree, spent the summer in the employ of the Victor Chemical Company in Montana. Wayne found time to acquaint George Moore, Jim Noel, and Byron Sheldon with the stratigraphy, structure, and economic geology of parts of Montana. With Wayne's assistance in the field, George and Jim made great strides toward the completion of their Ph.D. degree field problems, and Byron advanced his A.M. thesis work.

Dan Tudor and George Holland had an enjoyable summer as field assistants with the Geophysics Section of the Indiana State Geological Survey.

Victor Koskinen, a Ph.D. candidate on leave of absence from the United States Geological Survey, completed the mapping of the Kevin-Sunburst Dome in northern Montana. This work was carried out under the auspices of the United States Geological Survey.

Jack Harrison spent part of the summer as field assistant to Professor Haydn H. Murray. The remainder of the summer he devoted to field work for his A.M. thesis.

Following their return from field camp in Montana, Don Buchholz, Ken Huff, and Charles Lindenschmidt worked at a variety of chores for the Indiana Geological Survey. Also in the late summer and early fall, George Herr and Feroi Fish were employed by the Survey to prepare clay samples for X-ray and differential thermal analysis.

Granville Foley served as a preparator for the Industrial Minerals Section of the Survey and ground and burned his fingers to the bone in the preparation of countless thin sections. Granville has since joined the United States Geological Survey.

Malcom Boyce, a candidate for the A.M. degree in paleontology, spent a most unique summer as a guide at a tourist attraction in New York known as "Petrified Creatures". Malcom showed visitors such things as sharks teeth, invertebrate fossils, and petrified trees. (His experience helped him earn an A grade in the first semester of the graduate course in Invertebrate Paleontology.)

Jim Mahorney, still as sturdy as ever, spent the summer in the United States Army Signal Corps at Fort Hood, Texas. In addition to collecting many fine fossils in this area, Jim made many expeditions of a romantic nature to Waco, Texas. Jim has now returned to the safer environment of Owen Hall, in which he is striving for an A.M. degree.

Robert D. Jenkins, Jack Nelson, and C. Francis Shutts saw much of western Indiana during their employment as field assistants with the Coal Section of the Indiana Geological Survey.

William Garrison, a well known TV square dancer, became acquainted with the glacial deposits of Indiana as field assistant to W. J. Wayne of the Glacial Geology Section of the Survey.

During late summer and early fall, Robert Jenkins, Jack Nelson, Allen Perry, Richard Powell, and Lyndon Dean worked in the Coal Section of the Survey. Richard Pfaff and Howard Smith toiled for the Glacial Geology Section and Publications Section of the Indiana Geological Survey, respectively, during this same period.

Joe St. Jean continued his Ph.D. studies on the stromatoporoids; Joe has some eminence now, as Professor J. J. Galloway, the director of his research, commonly refers to Joe as his colleague.

Lawrence (Larry) Rooney was a Graduate (Teaching) Assistant at the Indiana University Geologic Field Station in Montana. He found his work enjoyable because of certain feminine members of the student body.

George Herr carried out plane table mapping for the California Oil Company in North Dakota and adjoining Montana.

Jack Warren, a budding geophysicist who is suitably nicknamed "High Pockets", spent an interesting summer in western Kentucky where he was working on his A.M. thesis project.

Bruce Bohor, now a candidate for the Ph.D. degree at the University of Illinois, worked in the refreshingly cool quarters of the Industrial Minerals Section of the Geological Survey where he made laboratory tests on clays and shale under the direction of Professor Haydn H. Murray.

Richard Larsen, the Romeo of the student body, completed field studies of the Merom (Pennsylvanian) sandstone of western Indiana; Dick has now completed all requirements for the A.M. degree.

Donald K. Camerson and David Von Tress spent the early part of the summer completing their A.M. theses in Paleontology. Later in the summer, Don joined the California Company in New Orleans, and Dave took off in his Studebaker convertible for the offices of the Texas Company in Houston, Texas. Dave's address is Apartment 4, 1819 Southmore, Houston, Texas.

Alan Horowitz, a candidate for the Ph.D. degree in paleontology, carried out reconnaissance field work for the Sohio Petroleum Company in the Black Hills of South Dakota. All saw rocks that ranged in age from Cambrian to Upper Cretaceous.

Chuck Reynolds, who is working with Dr. Beck in mineralogy, studied late Paleozoic rocks in New Mexico while in the employ of the Shell Oil Company.

Mrs. Phyllis Renzetti performed household tasks in a town in Chile that bears the name of Chuquicamata, where husband Bert is stationed. She has since laid aside the floor mop and returned to I.U. to work on a Ph.D. degree in paleontology.

Paul Raymond, aptly called "Scooter", was field assistant to Professor William Thornbury in his studies of the glacial deposits of Tippecanoe County, Indiana; this work was carried out under the sponsorship of the Indiana Geological Survey. Paul is still complaining about being associated with such a hard taskmaster!

The following Indiana University students trudged over the hills of Montana while enrolled in the course Field Geology in the Rocky Mountains: Joe Bodart, Don Buchholz, Bert Fell, Lowell Gladish, Kenneth Huff, Clyde Huffman, Jim Kercher, Jim Koenig, Charles Lindenschmidt, Maurice McClain, Carl Myers, Irwin Parrish, Reevan Rarick, Frank Revetta, Rosalia Rey, Alan Rommel, Neil Schemehorn, Howard Smith, Jim Smith, Jack Wells, Janet Wert, and Gary Wirey.

ACTIVITIES OF THE GEOLOGICAL SURVEY

Coal Section

Henry Gray has been appointed map editor for the Survey. All maps in all publications must pass through his hands. He recently spent a week in Washington, D. C., conferring with the U.S.G.S. on map problems and map reproduction methods. He is also assisting in the preparation of Robert Weidman's thesis for publication, and the Switz City quadrangle, which will be published as a U.S.G.S. Coal Map.

Coal Resources Maps have been completed for Pike, Gibson, Clay, and Warrick Counties. Work is continuing on a more detailed mapping of coal resources in quadrangles adjacent to Terre Haute and Brazil.

Prof. James Canright of the Botany Department, who worked for the Coal Section during the summers of 1953 and 1954, has completed a manuscript on the common plant fossils found in the Pennsylvanian rocks of Indiana.

G. K. Guennel has completed three years work on the spores in the Pottsville coals and is now preparing the illustrations for a manuscript. In September, he presented a paper entitled "New spore species found in the Pottsville of Indiana" before the American Institute of Botanical Sciences at the University of Florida, Gainesville.

Charles E. Wier and Samuel A. Friedman presented a paper entitled "Three Pleistocene terraces near Terre Haute, Indiana" at the Fall (1954) meeting of the Indiana Academy of Science.

Stratigraphic mapping of the Mississippian-Pennsylvanian unconformity, the Mansfield sandstone, and the underlying Mississippian formations is being continued by Henry Gray in order to answer many problems concerning stratigraphy and facies changes.

Henry H. Gray presented a paper in April before the Ohio Academy of Science entitled "Sedimentary traps as a control of cyclic sedimentation".

Drafting Section

Floor plans showing alterations to be made in the basement and first floor of Wylie Hall are being prepared. The space will subsequently house the Geological Survey's spectrography, coal chemistry, clay mineralogy, and photographic laboratories, and the Coal, Geophysics, Glacial Geology, Publications, and Drafting Sections.

The new geologic map of Indiana is in final stages of drafting and should be ready for distribution later this year.

Geochemistry Section

Robert Conley, who took his training in Chemistry at I.U., joined the staff as spectrographer last summer, replacing S. Ross Taylor, who went to Oxford University, England.

The coal laboratory was completed and samples are being run routinely for proximate analysis. Ultimate analysis has been started.

Cuttings and cores are being studied more extensively in connection with the limestone investigation. The section personnel hope to provide geochemical information for the forthcoming field conference on the Devonian limestones.

Dick Leininger and Haydn Murray have two joint projects in progress: one on the mineralogy and geochemistry of the weathering of an Illinoian till; the other, a study of a soil from Monroe County. Two papers on the Illinoian till problem were presented in November at the G.S.A. meetings in Los Angeles.

At a carbonate rocks symposium held in Ann Arbor, Dick Leininger presented a paper at this meeting entitled "Application of chemical gradient to stratigraphic correlation". This paper was based on work done by Dick and John Patton.

Work has been started to determine the cause of color in the Geneva dolomite.

Some experimental and armchair work has been done on the system calcium sulfate-water in connection with Wayne Bundy's petrographic work.

Dick Leininger was appointed chairman of the "Spacemen", a committee to study and make recommendations for the most efficient use of space allotted by the University to the Survey in Wylie Hall.

Geophysics Section

Edward McKinney, who started as driller's assistant last June, resigned in March. His duties were taken over by Teddy T. Hunter.

The section carried out considerable refraction seismic work for the Glacial Geology and Coal Sections.

Drilling was done in the western part of the state for the Coal Section, and assistance in stratigraphic studies was given to the Indiana Flood Control and Water Resources Commission and the U.S. Army Corps of Engineers in locating a dam site on the Mississinewa River.

Laboratory models of Geiger and scintillation counters have been obtained, to be used in studies of radioactivity in the state.

Joseph F. Whaley has nearly completed construction of equipment for logging resistivity and self-potential higher than that obtainable with commercial equipment.

Seismic, magnetic, gravitational, and resistivity surveys have been made in detail over a reef structure exposed in the wall of a crushed stone quarry. It is hoped that completion of this study will reveal physical anomalies which will permit the detection of such structures by these methods.

Industrial Minerals Section

Seymour Greenberg returned on February 1, 1955 to his duties as petrographer after being on military leave. He is assisting in the preparation for publication of "Mineralogy of Indiana" by Richard C. Erd. He is also working on the heavy minerals in Indiana sandstones.

(Mrs) Ann Parsons has replaced as secretary (Mrs) Judy Spear, who moved to Cincinnati last fall.

Last summer, Duncan McGregor worked on the geology of Monroe County and Ned Smith on Lawrence County.

Wayne Bundy is working on the petrology of gypsum from two cores from Martin and Owen Counties. His investigation of iron deposits in the Mansfield formation is completed.

A paper entitled "Size distribution and lithologies of Indiana gravels" was presented by Duncan McGregor at the A.I.M.E. meetings in Chicago in February.

The N.M. Smith-T.G. Perry publication, "Meramec-Chester and intra-Chester boundaries in Indiana, and associated strata", should be available within the next year.

Arthur Pinsak has almost completed his investigation of the subsurface Salem. His work this past year has contributed significantly to the new geologic map of Indiana and to a recent publication of the C. & E. I. Railroad on Indiana.

Haydn Murray and John Smith have completed investigations on lightweight aggregates and on the bonding strength of underclays for foundries. Both of these projects will result in publications in the near future.

Wayne Bundy presented a paper at the fall meeting of the Indiana Academy of Science entitled "Iron ore of Indiana".

Petroleum Section

New personnel in the Petroleum Section include (Mrs) Peg Dooley, who began work as typist last May; Evert W. Christensen and Olin R. Holt, both of whom began their duties as geologists on July 1, 1954.

William Flanagan resigned from his position April 1, 1955, to join the Shell Oil Company. His assignment is at Billings, Montana, where he is associated with Steve Theodosis.

Arthur C. Brookley and Evert W. Christensen have accepted positions as micropaleontologists with Standard Oil Company of California. Both will be leaving here in June - Mr. Brookley for Los Angeles and Mr. Christensen for Bakersfield, California.

Samuel L. Riely, on military leave, is currently assigned to a survey crew in Panama. We anticipate his return to the Section next Spring.

Petroleum exploration maps have been completed for Spencer and Perry Counties, and similar maps are in progress for Vanderburgh and Pike Counties.

Sample storage facilities have been expanded and the southwest room of the old printing plant has been taken over for core storage.

A complete file of small-scale electric logs on Indiana wells is being established and when completed, will contain some 8,000 electric logs.

At the fall meeting of the Indiana Academy of Science in Lafayette, Mr. Brookley and Dr. T. G. Perry of the Department of Geology presented jointly a paper entitled "A Striking Example of Pre-Pennsylvanian Erosion in Orange County, Indiana."

Glacial Geology Section

Dr. William D. Thornbury began mapping the geology of Tippecanoe County during the 1954 field season.

William J. Wayne led a field trip for the Indiana Academy of Science spring meeting in May, 1954. The trip started from Pokagon State Park and covered glacial geology of northern Steuben County.

At the G.S.A. meeting in Los Angeles in November, 1954, Bill presented a paper "Kansas till and a pre-Kansan loess faunule from Indiana".

Work has continued on studies of Pleistocene molluscs, with particular emphasis on early Wisconsin faunas.

Bill Wayne was elected chairman for 1955 of the Geology and Geography Section of the Indiana Academy of Science at the meeting in Lafayette in October, 1954.

The map of glacial drift thickness in Indiana, compiled over the past several years, has undergone final revision in preparation for publication.

Publications Section

Publications which have recently become available are Report of Progress No. 8 - Gypsum and anhydrite deposits in southwestern Indiana, by D. J. McGregor; Circular No. 3 - Common rocks, minerals, and fossils found in Indiana, by N. M. Smith, A. C. Brookley, Jr., and D. J. McGregor; and Directory No. 3 - Directory of producers and consumers of clay and shale in Indiana, by H. H. Murray. The following publications will be available in the near future: Geologic report on Miami County, by W. D. Thornbury and H. L. Dean; Thickness of drift and bedrock physiography of Indiana north of Wisconsin glacial boundary, by W. J. Wayne; A Middle Pennsylvanian foraminiferal fauna from Dubois County, Indiana, by J. St. Jean; High silica sand potentialities of the Ohio River formation, by A. P. Pinsak.

Because of the increasing interest in rock and mineral collections, Circular No. 3, listed above, was compiled. It is designed to accompany a suite of specimens which are sent, free of charge, to school groups, scouts, museums, and similar organizations. A charge of \$3.00 is made to individuals requesting this collection.

Gerald Woodard spent March 30 to April 1 in Washington, D. C., working on editing problems with section of texts of the U.S.G.S.

General

Drs. Deiss and Patton attended, in May, 1954, the Interstate Oil Compact Commission meeting in Savannah, Georgia. In December, they attended the Compact meeting in Chicago and turned in a report, "Underground storage of petroleum and its liquid products in Indiana", which will be published as part of a volume dealing with underground storage possibilities throughout the United States. Dr. Deiss also went to Dallas in February to attend a conference of educators called by the Interstate Oil Compact Commission to discuss ways in which the Compact can cooperate with educational institutions of higher learning on a program of oil and gas conservation.

Drs. Deiss and Patton attended the A.I.M.E. meetings in Chicago in February.

T. A. Dawson and John Patton are working on a revision of Silurian-Devonian correlations in Indiana. Several core holes have been drilled for this project by the Geophysics Section.

The educational moving picture "The State Beneath Us", which tells of the work of the Indiana Geological Survey and presents a general review of the geology of Indiana, is nearly completed after a year of work. The picture is in color and sound and runs approximately 20 minutes. It should be available by June. It was made by the Indiana University Audio-Visual Center.

Dr. Patton gave a talk at the October meeting of the Indiana Society of Professional Engineers on "Geologic setting of Indiana's mineral resources". In February, he discussed "Geology of ground water in Indiana" before the Indiana section of the American Waterworks Association.

RECENT GRADUATES IN GEOLOGY

A. B. - June, 1954

Cleveland, John H., 1244 E. Wylie, Bloomington, Indiana

B. S. - June, 1954

Colville, Alan A., 10701 E. 24th Place, Gary, Indiana
 Harrison, Jack L., University Apartments 120 East, Bloomington, Indiana
 Newson, Donald R., Worthington, Indiana
 Otte, Leonard B., R. R. #4, Seymour, Indiana
 Prentiss, David D., 813 David Street, Elmira, New York
 Treadway, Keith R., c/o Wayne Vaughan, R. R. #1, Granger, Indiana
 Warner, Marvin E., R. R. #2, Dillsboro, Indiana
 Warren, Jack R., 217 Chestnut Street, Evansville, Indiana

A. M. - June, 1954

Miesch, Alfred T., c/o U. S. Geol. Survey, Grand Junction, Colorado.
 Thesis: Geology of the Socorro Manganese Area, Socorro County, New Mexico.

Moore, George T., 7427 Isham Avenue, Chicago 31, Illinois.
 Thesis: Intrusions in the Middle Cambrian Formation, Cottonwood Canyon, Jefferson County, Montana.

Roemermann, Donald G., 117 Cedar Street, Mt. Vermont, New York.
 Thesis: The Subsurface Sellersburg Limestone of Southern Indiana.

Sayyab, Abdullah Shakir, Abulkhasib Street, Basrah, Iraq.
 Thesis: Petrology of Some Recent Marine Sediments off the North Carolina Coast.

Ph.D. - June, 1954

Barnes, James V., 27 Elmwood Drive, Council Bluffs, Iowa
 Major: Economic Geology
 Minors: Chemistry and Structural Geology
 Thesis: Structural Analysis of the Northern End of the Tobacco Root
 Mountains, Madison County, Montana

A.B. - September, 1954

Fell, Bert H., 1005 West Mulberry, Kokomo, Indiana
 Foley, Granville D., c/o U. S. Geological Survey, Grand Junction, Colorado
 Rarick, Reevan D., R. R. #1, Upland, Indiana

B.S. - September, 1954

Davis, Daniel R. T., 3178 Freemont Avenue, Lowell, Indiana
 Gladish, Lowell E., R. R. #4, Petersburg, Indiana

A.M. - September, 1954

Cameron, Donald K., Jr., 4426 Paris Avenue, Apt. C, New Orleans, Louisiana
 Thesis: Bryozoan Fauna of the Jefferson Lake Section

A.B. - February, 1955

Derner, George B., 410 E. 6th Avenue, Gary, Indiana
 Garrison, William A., University Apartments, W 109, Bloomington, Indiana
 Kaschube, William L., Floral Apartments, Robinson, Illinois
 Rey, Rosalia E., 935 S. High Street, Bloomington, Indiana
 Smith, Howard, E., 28 Woodlawn Courts, Bloomington, Indiana

B.S. - February, 1955

Lockhart, Carl W., R. R. #1, Quincy, Indiana
 Wert, Janet K., 2720 E. Kessler Blvd., Indianapolis, Indiana

VITAL STATISTICS

Births

- July 17, 1954 - a daughter, Tamara, to Mr. and Mrs. John Smith.
 June 22, 1954 - a son, Peter Kevin, to Prof. and Mrs. T. G. Perry.
 February 13, 1955 - a son, Neil Joseph, to Mr. and Mrs. Harold Kaska.
 December 6, 1954 - a daughter, Janet, to Mr. and Mrs. Wayne Bundy.
 January 16, 1955 - a daughter, Carol, to Mr. and Mrs. William Flanagan.
 September 26, 1954 - a son, Kyle, to Mr. and Mrs. Harold Hutchinson.

August 8, 1954 - a son, Robert, to Mr. and Mrs. Donald Devening.

June 29, 1954 - a daughter, Nancy, to Mr. and Mrs. Jack Pickering.

July 14, 1954 - a son, Evan Emil, to Mr. and Mrs. Louis Miller.

_____ - a daughter, Hallie Ann, to Mr. and Mrs. Paul Yundt.

Marriages

June 19, 1954 - Don Cameron to Barbara Jean Cross of Ft. Wayne, Indiana

June 19, 1954 - Evart Christensen to Suzanne K. Crawford of Ludington, Michigan.

Deaths

February 22, 1955 - Harry B. Johnson, A. B. '11.

March 26, 1955 - Charles F. Deiss, Sr., father of Dr. Charles F. Deiss, at Middletown, Ohio.

FACULTY AND STUDENT PARTICIPATION IN SCIENTIFIC MEETINGS

G.S.A. meeting Los Angeles, California, November, 1954.

In attendance: Professors Deiss, Murray, and Thornbury.

Papers presented: "Vertical changes in mineral composition of a partially weathered Illinoian till" -- H. H. Murray and Henrich Neumann. "Vertical changes in chemical composition of a partially weathered Illinoian till" -- R. K. Leininger and H. H. Murray.

Indiana Academy of Science, Purdue University, October, 1954.

In attendance: Professor T. G. Perry

Paper presented: "A striking example of pre-Pennsylvanian Erosion in Orange County, Indiana" -- T. G. Perry and Arthur C. Brookley, Jr.

A.I.M.M.E. Meeting, Chicago, February, 1955.

In attendance: Professors Deiss, Lowell, McGregor, Mead, and Patton; and Mr. Jack R. Warren.

Paper presented: "Size distribution and lithologies of Indiana Gravel" -- Duncan J. McGregor.

A.A.P.G. Meeting, New York City, April, 1955.

In attendance: Professors Deiss, Esarey, Galloway, Murray, and Patton.

The following students also attended: Jim Koenig, Irwin Parrish, Jack Warren, Paul Raymond, and James Noel.

Southeastern Section of the G.S.A., Durham, North Carolina, April, 1955.
 In attendance: Professors Hattin, Perry, and Wilson; and Mr. Alan Horowitz.
 Paper presented: "Osgood (Niagaran) bryozoans from the type area" -- T. G. Perry and D. E. Hattin.

The Annual American Geophysical Union Meeting, Washington, D. C., May, 1955.
 In attendance: Professor Wilson
 Paper presented: "The significance of some minor structures in Australian charnockitic rocks" -- A. F. Wilson.

Field Conference of the Western Friends of the Pleistocene, Western Iowa, May, 1955.
 In attendance: Professor Thornbury and W. J. Wayne of the Indiana Geological Survey.

National Clay Minerals Conference, Houston, Texas, October, 1954.
 In attendance: Professor Murray.

Pacific Coast Regional Clay Conference, Berkeley, California, July, 1954.
 In attendance: Professor Murray.

Symposium on Carbonate Rocks, Ann Arbor, Michigan, February, 1955.
 In attendance: Professor Beck.

INDIANA UNIVERSITY SUMMER FIELD CAMP, 1954

The summer field camp was held from June 21 to August 12, 1954. Twenty-six students were enrolled in the course. Miss Laura Bruckheimer, City College of New York, Miss Catherine Mehler, Mouth Holyoke College, William J. Schell, University of Tulsa, and James Kahle, University of Alaska, were the students enrolled from other colleges.

Staff members for the field course included Lawrence Rooney, Graduate Assistant, and Professor Ralph E. Esarey and Wayne R. Lowell.

Geologic map areas included the area north and south of the Lewis and Clark Cavern and an area of several square miles to the south of the Jefferson River. The map areas turned out to have the usual complex folding, thrust-and high angle faults. The geologic mapping completed last summer filled in the northeast part of the Jefferson 15 minute quadrangle.

The Glacier Park, Yellowstone Park, and Dillon area trips were taken to develop the pre-Cambrian and Tertiary geologic history of western Montana for the students. The most unusual event at the campus was the romance of Bill Schell and Penny Mehler which culminated in marriage late in August.

FACULTY AND SCHOLARSHIP AWARD

Each year since 1952, the Geology faculty have given an award to stimulate scholarship among the undergraduates in the department. The award is given to the student with the highest scholastic average at

the completion of the Junior year. The award is presented at the second Journal Club in the fall by the Department Chairman.

The student with the highest overall academic record for the academic year 1953-54 was Rosalia Rey, who is now the proud possessor of a Brunton compass bearing the engraved inscription "Geology Faculty Scholarship Award, 1954, Rosalia Rey". Rosalia has an outstanding record which includes 122 hours of A and 10 hours of B for an overall index of 2.92. Her geology record is 57 hours of A for a 3.00 index. In addition to the geology award, Miss Rey is a member of Phi Beta Kappa and is now a teaching assistant in the department. Her ambition is to become a professional geologist and work with an organization like the U.S.G.S. in Denver or elsewhere in the west. She is a native of Bloomington, Indiana and a daughter of Professor Agapito Rey of the I. U. Spanish Department.

OUR SECOND GREATEST NEED

Probably all of you are aware that it costs a lot of money to produce a winning football team these days. Athletic scholarships pay well. A recently much sought after Illinois high school star admitted that he was given an \$1,800 a year scholarship by the school of his choice. Some probably do much better than that. You may not realize, however, that the competition and bidding for promising graduate students is almost as keen as for football players. Assistantships and fellowships paying \$1,500 and more are not uncommon and \$1,000 is about rock bottom these days. Graduate students shop around nearly as much as athletes and, other things being equal, accept the highest offer.

We realize that few, if any, of you are so well off that you can personally set up a fellowship in your name. Many of you, however, do hold responsible positions with oil companies and you might be able to do your alma mater a good turn by using your influence to have your company establish a fellowship in geology at Indiana University. Oil companies are spending more money each year in support of graduate study.

Our department is as well equipped, if not better, than most departments. We have a competent staff. Our only real need, outside of a new building, is more money to subsidize more superior graduate students. This year, as pointed out by Dr. Deiss, we had to turn down fourteen good applicants for graduate subsidies because we did not have enough money to go around. Maybe a few words spoken by you to the right persons will bear fruit. Why don't you try at least?????

GRADUATE COURSES IN GEOLOGY

Most of you who receive the NEWS LETTER have been away from Indiana University more than ten years. You probably realize that there have been notable changes in the department since you graduated, but you may not be aware of how much the geology curriculum has expanded since you left. We are listing below the courses that may be taken by our graduate students with the hope that you will keep this offering in mind when you are talking with prospective graduate students as to where they might well do their graduate work.

Group A. Courses normally taken by undergraduates, but which, under certain circumstances, may be taken by graduate students.

<u>Course title</u>	<u>Instructor</u>
Petrography	Prof. Vitaliano
Principles of Invertebrate Paleontology	Prof. Perry
Principles of Stratigraphy	Prof. Hattin
Introduction to Earth Physics	Prof. Mead
Principles of Geomorphology	Prof. Thornbury
Economic Geology	Prof. Patton
Principles of Geophysics	Prof. Mead
Problems in Applied Geophysics	Prof. Mead
Field Geology in the Rocky Mountains	Prof. Lowell

Group B. Courses almost entirely limited to graduate students.

Sedimentation	Prof. Murray
Petrography of the Metamorphic Rocks	Prof. Vitaliano
Petrography of the Igneous Rocks	Prof. Vitaliano
Advanced Mineralogy	Prof. Beck
Stratigraphy of North America	Prof. Hattin
Principles of Seismology	Prof. Mead
Micropaleontology	Prof. Perry
Advanced Structural Geology	Prof. Mead
Glacial Geology	Prof. Thornbury
Physiography of North America	Prof. Thornbury
Invertebrate Paleontology	Prof. Perry
Subsurface Lithology and Stratigraphy	Prof. Esarey
Advanced Techniques	Staff
Clay Mineralogy	Prof. Murray
Sedimentary Petrography	Prof. Murray
Advanced Field Geology	Prof. Lowell
Principles of Geochemistry	Prof. Beck
Metalliferous Mineral Deposits	Prof. Lowell
Advanced Geophysics	Prof. Mead
X-ray Crystallography	Prof. Beck
Nonmetalliferous Mineral Deposits	Prof. Patton
Principles of Petroleum Geology	Prof. Esarey
Oil Field Stratigraphy	Prof. Esarey
Geologic Problems	Staff
Research	Staff

X-RAY DIFFRACTOMETER

The Department of Geology at Indiana University has purchased a Norelco Geiger Counter X-ray Diffractometer to augment its other X-ray equipment. The new instrument is designed primarily for powder X-ray diffraction studies, but it has applications in other X-ray fields. A film record of Powder X-ray diffraction consists of a series of concentric lines---each mineral has a unique pattern which makes for positive identification. A diffractometer record of powder X-ray diffraction

consists of a series of peaks recorded on chart paper---each peak corresponds to a line on a film record. The diffractometer method is rapid, speeds identification and interpretation, and provides maximum information. Basically, the diffractometer operates by having a Geiger Counter tube, instead of a film, receive reflections from a mineral. These impulses are amplified and then recorded as peaks on a chart.

The addition of the X-ray diffractometer to its other X-ray equipment provides the Department of Geology with excellent facilities for teaching and research in X-ray crystallography involving anything from identification of minerals to structure analyses.

1954-55 JOURNAL CLUB PROGRAMS

This year Journal Club has been handled by a committee consisting of three students and two faculty members. The student members were James Noel, Jack Harrison, and Rosalia Rey and the faculty members were T. G. Perry and H. H. Murray, chairman. We have had a large number of outside speakers and in general the programs have been stimulating. Journal Club meets every Monday afternoon at 4:00 P.M. and the audience consists of faculty members, Indiana Geological Survey members, graduate students and undergraduate majors in geology. We have had visitors from the department of Geology at Purdue, St. Joseph's college, and Depauw attend some of the lectures this year. The programs for this year were:

September 20, 1954 - Dr. T. G. Perry, Indiana University,
"Paleontologic Research at Indiana University."

September 27, 1954 - Dr. Alan Gutstadt, Indiana Geological Survey,
"Subsurface Cambrian and Ordovician Stratigraphy in Indiana".

October 4, 1954 - Dr. John C. Griffiths, Penn. State University,
"Definition of an Oil Reservoir Rock by Means of Quantitative Petrographic Analysis".

October 11, 1954 - Dr. Arthur F. Hagner, University of Illinois,
"Texture, Structure, and Composition of Metasomatic Rocks".

October 14, 1954 - Mr. Edward Koester, President A.A.P.G.
"Petroleum Exploration".

October 18, 1954 - (S.G.E. sponsored) Dr. Bradford Willard, Lehigh University,
"Paleozoic Landmasses in Eastern U. S.".

October 25, 1954 - Dr. J. Harlan Bretz, University of Chicago,
"Origin of Limestone Caverns".

November 8, 1954 - Dr. Duncan J. McGregor, Indiana Geological Survey,
"Gypsum in Southwestern Indiana"

November 15, 1954 - Mr. Robert Blakely, Indiana Geological Survey,
"Paleoclimatology".

November 22, 1954 - Dr. Carl W. Beck, Indiana University,
"Meteorites".

November 29, 1954 - Mr. Arnold Mason, University of Illinois,
"Features of Far East Geology".

December 6, 1954 - Dr. Walter D. Keller, University of Missouri,
"Uranium Deposits on the Colorado Plateau".

December 13, 1954 - (S.G.E. sponsored) Dr. Elmar Walter, St. Joseph's College,
"Engineering Geological Problems Along Mountain Highways".

January 3, 1955 - (S.G.E. sponsored) Film, "Iron Ore from Cerro Bolivar", (courtesy of U. S. Steel).

January 10, 1955 - Dr. Henry Gray, Indiana Geological Survey, "Stratigraphic Nomenclature in Discontinuous Cyclic Rock Units".

January 17, 1955 - Dr. J. Michael Carr, Visiting Professor University of Illinois, "Layered Basic Intrusions on the Isle of Skye, Scotland."

February 7, 1955 - Dr. Donald Hattin, Indiana University, "The Wreford Megacyclothem (Lower Permian) of Kansas".

February 14, 1955 - Dr. J. J. Galloway, Indiana University, "Stromatoporoids".

February 21, 1955 - Dr. John C. Frye, Chief, Illinois Geological Survey, "Review of Pliocene and Pleistocene of Western Europe Compared With the Same Age Beds in the Central Great Plains".

February 28, 1955 - Mr. Alan Horowitz, Indiana University, "Bedrock Geology of the Nunatarssuaq Area, N. W. Greenland".

March 7, 1955 - Dr. Allan Wilson, Visiting Professor, Indiana University, "The Pre-Cambrian Shield of Australia".

March 14, 1955 - (S.G.E. sponsored) Film "The Bahamas - Where Limestones Grow Today", (courtesy of Humble Oil Company).

March 21, 1955 - Dr. James Wilson, University of Michigan, "Thermal Expansion of Ice and Its Geologic Applications".

March 28, 1955 - Mr. Wayne Fowler, Indiana University, "Geology of the Trusty Lake and Quartz Hill Gulch Areas, Beaverhead, Montana".

April 4, 1955 - Dr. William Bradley, Illinois Geological Survey, "Clay Mineral Structural Implications in Diagenesis".

April 18, 1955 - Dr. Haydn Murray, Indiana University, "G.S.A.'s Death Valley Field Trip".

April 25, 1955 - Dr. H. B. Willman, Illinois Geological Survey, "The Pleistocene History of the Mississippi River Valley".

May 2, 1955 - Mr. Joseph St. Jean, Indiana University, "Devonian Stromatoporoids".

May 9, 1955 - Dr. Lynn Jacobsen, University of Kentucky, "Heavy Minerals as a Stratigraphic Tool in the Arbuckles of Oklahoma".

May 16, 1955 - Mr. Jack Harrison, Indiana University, "The Sedimentation Conditions in the Lower Chester of Indiana".

May 23, 1955 - Dr. James Canright, Indiana University, "Paleobotanical Correlations in the Pennsylvanian Rocks of Indiana".

SIGMA GAMMA EPSILON

Officers: Jim Noel, President; Charles Lindenschmidt, Secretary-treasurer; Larry Rooney, Corresponding secretary. Jack Harrison replaced as Vice President, Keith Treadway, who was drafted into the army in December.

Old Guard: In addition to the officers, the following members of last year remained active this year: Brock Strom, Carl Lockhart, Jay Rommes, Art Brookley, George Herr, Paul Raymond, Jack Warren, Wayne Fowler, Bruce Bohor, and Dick Larsen.

Transfers: The chapter was very fortunate in gaining the following members formerly with other chapters: Alan Horowitz of Ohio State, Charles Reynolds of the University of New Mexico, and Victor Koskinen of Montana State University.

Arrivals: The following new members were initiated during the year: Jim Mahorney, Neil Schemehorn, Jim Kercher, Kenneth Riggs, Michael Cowen, Dan Tudor, Gary Wirey, Donald Buchholz, Jim Koenig, Jack Nelson, Jack Wells, Howard Clar, Jack Conley, Ralph Hunter, Gary, Gates, Gerald Rupert, and Robert Jenkins.

Departures: Keith Treadway departed abruptly for the army in December. Bruce Bohor transferred at the end of the first semester to the University of Illinois to begin work on a doctorate. George Herr accepted a position as geologist for the Victor Chemical Works in Mount Pleasant, Tennessee.

Projects: The chapter sponsored several speakers at Journal Club, including Professors Bradford Willard of Lehigh University, Elmar Walter of St. Joseph's College, and Richard Stoiber of Dartmouth. The chapter also prepared packets of diminutive fauna from the Salem limestone, which were distributed at the A.A.P.G. meeting in New York this spring. The chapter also continued its hallowed custom of hallowed cakes and coffee on Monday and Wednesday afternoons.

Social: In addition to radiating everyday diffuse sweetness and light throughout the department, the members focused their conviviality about the tables of Bloomington's most fashionable boite de nuit to celebrate the initiation of the spring semester members. The evening was graced by the continued presence of the paleontology profs-- present, past, and future.

Jobs: Several of our members have permanent jobs lined up for June. Wayne Fowler, Ph.D. candidate, will be employed by the California Company. Arthur Brookley, M. A. candidate, will be working for Standard of California in California. Charles Reynolds, M. A., will be working for Standard of California out of Salt Lake City. Victor Koskinen, Ph.D. candidate, will resume his work with the U.S.G.S. out of Great Falls, Montana. Jack Warren, M.A. candidate, will enter Shell's training program in Houston. Paul Raymond, M. A. candidate, will work for the Texas Company in New Mexico. Jack Harrison, M. A. candidate, will work for the Indiana Geological Survey for the summer. Larry Rooney, Ph.D. candidate, will work for the Shell Oil Company out of Salt Lake City for the summer. Jim Noel, Ph.D. candidate, will continue his mapping projects in southwestern Montana for Victor Chemical Works. Jim Mahorney, M. A. candidate, will be his assistant.

Honors: Jack Harrison and Larry Rooney were awarded National Science Fellowships for 1955-1956.

NEWS ITEMS

A Christmas card from Dale Kline (A.B. '50; A.M. '52) indicated that he is still located in Bakersfield, California. We hear he is doing an excellent job. The Klins have three children and according to our secret agent, a fourth was due in April.

Bill Von Osinski (A.B. '35) has changed jobs but, not locations. He is still located at Midland, Texas, but is now with the Ada Oil Co. instead of Skelly Oil Co. His wife and three children visited in Indiana, but Bill didn't make it.

A letter from Mark Pangborn (A.B. '35), who is still with the U. S. Geological Survey in Washington, D. C., informs us that "Roz" Robinson is now "Roz" Modlin! He did not inform us as to when the change in name took place. A later report indicates that she has left the U.S.G.S. in anticipation of a blessed event.

We inadvertently omitted Frank Striker (A.B. '26) from our Washington, D.C. contingent last year.

Lowell Plock (B.S. '52) writes from Tallahassee, Florida, where he is employed by the Gulf Oil Corporation, that he is doing subsurface work in Florida and southern Alabama. The Plocks have a two year daughter, Susan Elizabeth.

David Lewis (B.S. '52), after a sojourn at the University of Minnesota, is now working for Uncle Sam. When last heard from he was at Fort Bliss, Texas.

Abdullah Sayyab (B.S. '51; A.M. '54) left Indiana for continued graduate study at the University of Iowa. We hated to lose Abdullah, but know that he will be a worthy representative of his country and I.U at Iowa. He is doing his Ph.D. thesis upon Cretaceous ostracods from the eastern Mediterranean area. We enjoyed his visit on the way to the A.A.P.G. meeting in New York.

Dr. S.S. Visher's Climatic Atlas of the United States, recently published by Harvard University Press, will have a strong appeal to any one interested in the climates of the United States. It contains over a thousand maps.

Robert E. Boyer (A.M. '54) is continuing his graduate studies as he works for his Ph.D. degree at the University of Michigan.

Harold Kaska (A.M. '52), who is chief paleontologist with the Dominion Oil Company, a subsidiary of Standard of California, in Trinidad, visited the department in January. His laboratory is growing, now that he has become adjusted to the tropics, and thinks he may stay there a few years longer.

Charlie Spencer (A.B. '37; A.M. '39) is now with Panuco Oil Leases, Inc. in Parkersburg, West Virginia.

Henry (Hank) O. Thomas (A.B. '50) is now a F.B.I. agent stationed in New York City. He would like to know the address of Harold Horst. If any one can supply him with this information, write Hank at 290 Broadway.

Gene Taylor (B.S. '50; A.M. '52) is still with Union Producing Company at Jackson, Mississippi.

Paul Raymond, who expects to obtain his A.M. degree in June, 1955, has accepted a position with The Texas Company and will be working out of Midland, Texas.

In November, Professor Hattin and Jim Mahorney made a trip to Rochester, Indiana to investigate reports of the finding of a mastodon skeleton. The two upper front leg bones and a vertebra had already been recovered. Further search of the site revealed a rib, humerus cap, vertebra fragment, and a left shoulder blade. The rest of the remains will be excavated later.

John Organ (A.B. '28) is still a regular attendant at I.U.'s basketball games and while here occasionally drops in at the department.

Jack Warren (B.S. '54), who expects to receive his A.M. degree in June, 1955, has accepted a position with the Shell Oil Company.

Most of you doubtless will be surprised to learn that I.U.'s new athletic director, Frank E. Allen (A.B. '16) graduated from the university with a major in geology. So far as our knowledge goes, however, he was never a practicing geologist.

Jack McIntosh (B.S. '52) and John Miller (A.B. '50) of Mount Carmel, Illinois, visited the department in December and witnessed the Freshman-Varsity basketball game. They say that Archie Dees can not miss making the varsity next year. To hear them talk, you would think that he is potentially better than Don Schlundt. Let us hope that they are right.

Your editor had a nice long visit with Arch Addington (A.B. '22, A.M. '25) while attending the G.S.A. meeting in Los Angeles. Arch is chairman of the geology department at Fresno State Teachers College, California, and has on his staff C. N. Beard, another I.U. alumnus. Arch was looking well and did not have as much around the waist as some of us do.

Robert B. Sublett (A.B. '50) is president this year of the Indiana-Kentucky Geological Society of Evansville, Indiana.

Most of you who received your training in Owen Hall would feel at home if you were to come back. As usual, it needs a paint job. The only difference you would see is that more of the plaster has fallen off. Some day, though, we may have a new building.

Dr. John R. Reeves (A.B. '20; A.M. '21; Ph.D. '23) acted as official representative of the A.A.P.G. at the inauguration of C. C. Furnas as chancellor of the University of Buffalo. This is probably one of the few times that Bob has been in academic regalia since he left the faculty of the Geology Department back in the 20's.

Grady Loftin (A.B. '51) has returned to school after a stint with the Coast and Geodetic Survey. The Loftins have a daughter, Sally.

At the risk of being accused of blowing his own horn, your editor will report his Principles of Geomorphology is meeting with rather favorable reception. As of March 1, 1955, it had been adopted by 59 schools in the U. S. and Canada.

D. V. Carter (A.B. '26) visited the Department on February 17. At a luncheon for him, he discussed the organization and personnel policies of the Petroleum Engineering Department of the Magnolia Petroleum Company. We wish that more of the old grads would visit us and duplicate D. V.'s performance.

During his second semester sabbatical leave, Professor Ralph Esarey flew to Trinidad, where he spent a week with Harold Kaska in Port-of-Spain. From there, he went on to Jusepin, Venezuela, to visit Walter Spangler of the Creole Oil Company for a few days, then on to Peru for a week with Victor Barua. After visiting oil fields in Columbia, Peru, and Chile, he came back north through Panama, arriving home in May.

Bert Renzetti (A.M. '52) will rejoin the graduate group next September to work on his Ph.D. in mining geology. He is now located with the Chile Exploration Company, Chuquicamata, Chile. His wife, Phyllis, already a member of the group, is working on her doctorate in paleontology.

Cards received from Addison King (B.S. '51) indicate that he is becoming quite a world traveler. In the spring of 1954, Addison, who is employed by Morgan Mines, Inc., was in Alaska "looking at a 23' coal seam" north of Kotzebue. Recently, he was in Miami, Florida, where he viewed many formations--rocks and otherwise.

The annual meeting of the Association of American State Geologists in Socorro, New Mexico, in March, ended Dr. Deiss's 1-year term as President of the Association.

Howard W. Pierce (A.M. '52) visited with several members of the faculty at G.S.A. in Los Angeles last fall. He expects to finish his Ph.D. degree at the University of Arizona this year. He is the proud father of two children and loves Arizona. He sent his regards to all his old friends at Indiana.

Robert R. Shrock (A.B. '25, A.M. '26, Ph.D. '25) visited with Professors Thornbury and Murray on the Death Valley field trip after G.S.A. meeting. He always likes to keep in touch with the geology department at I.U. Bob functions as chairman of the geology department at M.I.T.

William J. Wayne (A.M. '50, Ph.D. '52) and his wife and two children moved into new quarters last summer. Bill decided to buy 20 acres of land and build a basement home for the time being and plans to finish the house as soon as he can replenish his capital.

Al Miesch (A.M. '54) is with the U.S. Geological Survey and is working out of Grand Junction, Colorado.

Frank Johnson (A.M. '52) is with the Standard Oil Company of California doing geophysical work from the Los Angeles Office.

Gordon Grender (B.S. '51; A.M. '52) is doing geophysical work for Standard of California from the Bakersfield office.

Elbert Hale is also doing geophysical work for Standard of California in the Bakersfield area. The Hales now have three boys. The Hale family in five generations has not produced a girl, so Bert wasn't surprised when their latest boy was born in March. Don't feel discouraged, Elbert, basketball teams make good money these days.

Harold (Dizzy) Deane (A.B. '49; A.M. '52) is still with the Standard of California and is doing field work in the state of Washington,

John (Jack) Barr (A.M. '51) is with the Standard Of California doing subsurface in the Bakersfield office. Jack is a great sports car enthusiast and owns a MG.

Dick Bowen (A.M. '51) is on a one-year leave of absence from the Standard of California and is off to Australia to study reefs.

Thomas Hendrickson (A.B. '49) is with the Union Producing Company, New Orleans, Louisiana. The Hendricksons are the proud parents of a little girl, now one year old.

Kenneth M. Waters (A.B. '49; A.M. '50) is with the California Company at New Orleans, Louisiana. He is now areal geologist in charge of the lower Mississippi delta and off-shore areas surrounding it. Ken is very happy with his work and his family of a wife and two small girls.

Thomas D. Jones (A.B. '51, A.M. '53) dropped into the department last fall. He likes his work with Magnolia Petroleum Company very much.

George Puscas (A.B. '51, A.M. '53) visited the department on his last military furlough. He says the army doesn't teach you much geology.

Charles R. Connaughton (A.B. '50, A.M. '53) is working for Skelly Oil Company in Pawhuska, Oklahoma. He dropped into the department last summer and sends his regards to all his old friends.

Frank Kottowski (A.B. '47, A.M. '49, Ph.D. '51) attended the G.S.A. meetings last fall and visited with several of the faculty members. He enjoys his work with the New Mexico Bureau of Mines and hopes that all his I.U. friends will drop in to see him if they are ever in the vicinity of Socorro, New Mexico. He was on the Death Valley trip. We are looking forward to seeing him and Florence at New Orleans next fall.

Maurice E. Biggs (A.B. '48, A.M. '50) and his wife and two children moved into a new home last year. He is busy trying to run down all the uranium rumors in Indiana, but to no avail. Maurice is doing an excellent job as head of the Geophysics Section of the Indiana Geological Survey.

Donald Devening (A.M. '53) and his family, Ann and three boys, moved into a new home in Jackson, Mississippi. Don is with the California Oil Company.

Kenny Vance (A.M. '53), his wife Joyce, and daughter Marilyn, visited the department last fall. Ken is with the California Oil Company in Bismarck, North Dakota. He is the winningest handball pitcher in the American Legion league in North Dakota.

Bennie Edwards (B.S. '53) is a corporal in the army at Ft. Bragg, N. C. He expects to return to I.U. next fall to work for an A.M. degree.

Sam Riely (A.M. '53) is with the Army in the Panama Canal Zone. He is with a topographic mapping unit. He spent last winter in Palm Springs, California making topo maps. Some guys get all the breaks.

Seymour Greenberg (A.M. '53) returned to his job as petrographer with the Indiana Geological Survey after two years in the army in Germany.

S. R. Taylor (Ph. D. '54) is teaching at Oxford, England, this year and enjoys it very much. He hopes to return to this continent soon though, because the beer is too warm in England.

Dr. Brian Mason, now curator of Geology and Mineralogy at the American Museum of Natural History in New York City, reports that his round the world trip last year was very successful. Dr. Mason mapped geology in New Zealand and collected minerals for the museum in Australia, India, Africa, and Europe. Brian is probably busy now concecting another mineral-collecting trip for the Museum which he would like to go on.

Arthur Pinsak (B.S. '51; A.m. '53), now employed in the Industrial Minerals Section of the Indiana Geological Survey, is the proud owner of a new Olds 88 hardtop. He always was a lady killer, but now -----wow!

Donald Roemermann (A.M. '54) accepted a position with Carter Oil Company, but at present is on leave of absence to the Army.

A Christmas card was received from Granville "Red" Foley (A.B. '54) from Grand Junction, Colorado. Red didn't say what he was doing, but presumably he is helping in the search for uranium ores.

Your editor received a Christmas card from Frank Revetta from Fort Lee, Virginia.

Paul Yundt (B.S. '49) is still at Owensboro, Kentucky. The Yundts have two daughters, Mary Lou and Hallie Ann.

Bob Sargent (A.M. '53) is still based at Lead, South Dakota with the Homestake Mining Co. He and Mrs. Sargent spent the summer in eastern Wyoming hunting for uarnium ore.

A Christmas card was received from John Hughes (A.B. '49; A.M. '51) and family from Lewiston, Montana. Presumably, however, his permanent address is Bismarck, N. D. as he indicated no change of address. He was a welcome visitor at summer field camp last summer.

Jack Pickering (A.B. '51; A.M. '52) is still with the New Jersey Zinc Company at Franklin, New Jersey. His work has been mainly surface exploration. He expects to co-author soon a paper on the geology and structure of the Franklin-Sterling area, in New Jersey.

Wayne Fowler (A.M. '53), who hopes to receive his Ph.D. degree in June, 1955, has accepted a position with The California Company.

Dennis Lucas (B.S. '50) is with the California Company, New Orleans, Louisiana, and is "bird dogging" a seismic crew out of Houma, Louisiana.

Dallas Fiantt (A.B. '49; A.M. '50) is with the Texas Company at New Iberia, Louisiana. New Iberia is located in the heart of Longfellow's "Evangeline" country which is very beautiful with its large oaks, Spanish moss, and is famous for its sugar cane and oil.

Dr. J. J. Galloway (A.B. '90; A. M. '11; Ph.D. '13), Professor Emeritus of Geology and Paleontology, attended the Oil Finder's Convention in New York, March 28-31. He was given a citation by the Society of Economic Paleontologists and Mineralogists as an Honorary Member. He is the second one to be so honored in the 28 years of the Society's existence. At the meeting, he was greeted by thirty of his former students, most of whom have made petroleum geology their life work.

Thomas Hiestand (A.B. '22), who is with the Brooks-Scanlin, Inc., is happy with life in Denver.

The Indiana Geological Survey and Sigma Gamma Epsilon advertised Indiana's geology and fossils at the New York A.A.P.G. Convention by distributing 180 samples of the diminutive Salem limestone fossils from the old Cleveland Quarry near Harrodsburg.

Glenn Bartle (A.B. '21; A.M. '23; Ph.D. '32) has had his title changed from Provost to President of Harpur College, Endicott, New York. We haven't heard of him hiring any of those good I.U. graduates for his faculty.

Jim Powell (B.S. '53) is working for the Victor Chemical Company out of Columbia, Tennessee. George Herr has recently been employed to work with Jim.

Bob Barbour (B.S. '52) resigned his job with Bell Brothers to accept a position with the Ohio Oil Company in Terre Haute, Indiana.

Bob Stouse (B.S. '52) was in Bloomington some time ago. He has been working with a Geophysical Company, but plans to go into business for himself.

Don (A.B. '49; A.M. '51), Tootie, Mark, and Ann Hyer sent in a Christmas card. Don tells us there may be another name on the card next year. They still live in New Orleans. Don is engaged in exploration work for the Texas Company.

Bud Sorgenfrei (A.B. '50; A.M. '52) writes from Lafayette, Louisiana that the whole family is behaving more and more like Southerners. Bud is doing exploration work and likes it very much. He reports that he often sees Jake Fiandt and Vic Olson. His letter was signed "Bud, Lura, Steve, Mark, and Karen".

Dr. H. Noble Coryell (A.B. '14; A.M. '15) has retired from the Department of Geology, Columbia University, and is spending his retirement teaching micropaleontology at the University of Dayton, Ohio. The class does its laboratory work in the basement of the Coryell home in Dayton.

Camille Bushman has been working with the United States Geological Survey on permafrost and has been located at Natick, Massachusetts. She had previously been with an oil company and now feels the urge to get back into the oil game, which seems to be more exciting than studying the effects of freezing on soil.

Dr. W. J. Wayne, Head of the Glacial Section of the State Geological Survey, gave two talks on April 4, at Purdue University. He discussed "Pre-Glacial Drainage Patterns" before an Agronomy seminar and talked on "Buried Soil Profiles in Pleistocene Stratigraphy" at a meeting of the Soil Science Society of Indiana.

Professor Donald E. Hattin has received notice that Uncle Sam is going to require his services for a couple of years sometime after June 1. The probability is that Don's work will be taken over by visiting professors during his absence.

Marvin Warner (B.S. '54), who is doing his two-year stint for Uncle Sam and is presently located at Fort Monmouth, New Jersey, visited the Department in early April. He has kept alive his interest in geology by visits to the geology department at Princeton and to the American Museum of Natural History in New York.

Your editor probably has the rare distinction of being the only person who has carried a golden silk umbrella for three days through Death Valley. The way it came about was that Mrs. Thornbury insisted upon taking an umbrella to Los Angeles, despite the fact that everyone knows that it never rains there. When she left for a visit at Pomona while ye editor took the three day Death Valley trip after the G.S.A. meeting, she unfortunately left the umbrella in our hotel room. There were two alternatives--either leave it there or take it along. In view of the fact that it had just been purchased, was practically unused, and was the wife's pride and joy, there seemed to be only one choice that could be made and still maintain peace in the family. The looks I received from my fellow passengers seemed to say---"Oh, well, just another goofy college professor!".

Frederick P. Schweers (A.B. '39; A.M. '40) is still with the Mercury Drilling Company in Oklahoma City. He is the father of three children and is as tall and thin as ever.

Richard H. Schweers (A.B. '33; A.M. '37) is still with the Texas Company at Fort Worth and has grown into a big man, both with regard to his status with the Company and as to how he registers on the scales.

Roger L. Battin (A.B. '51) is scheduled to be Instructor in Paleontology at the University of Wisconsin beginning next September. He is very happy working with snails.

"The Institute of Stromatoporology" is doing a thriving business. Dr. Galloway and Joe St. Jean have a paper on the stromatoporoids due to be published this April, another paper scheduled to be published in the Journal of Paleontology in September, and another next January. Their monograph on the structure and classification of the Stromatoporoidea is nearly ready for the Press. Their fifth paper, "The Stromatoporoids of the Devonian of Indiana", is far along.

The Robert Beibermans are still working for Pat Callaghan at the New Mexico Bureau of Mines. They brought the children for a visit to the Campus last summer.

Keith Treadway (B.S. '54), who was a graduate assistant in Physical Geology and Geomorphology during part of the first semester, was inducted into the army in December. No reports have been received from him as to his whereabouts.

Jim McCullough (A.B. '28) is still operating the Denver office for the Carter Oil Company. Some of us see him once a year at the meetings, but he certainly owes a visit to the campus.

Ray Robbins (A.B. '36), who is with the Trigood Company, still continues to "bring them in". He is becoming one of the solid citizens of Casper.

Walt Spangler (A.B. '39; A.M. '40) writes occasionally from Jusepin, Venezuela. He recently visited the U.S., but did not have time to come to Bloomington. He is doing well with the Creole Company.

Karl "Spook" Frielinghausen (A.B. '48; A.M. '50) sends his regards with an invitation for everyone to attend the A.A.P.G. meeting in Billings. However, he fully expects to drink to our health if we don't get there. He is building a new home for his wife and little daughter.

Professor Carl W. Beck plays a wicked hand at bridge. To avoid any heated dispute, we will class him as our best active faculty bridge player and Dr. Galloway as our best retired faculty player.

Professor T. G. Perry has been elected Secretary of the Men's Faculty Club; he also served as master of ceremonies of the annual Christmas Party of the Men's Faculty Club.

Charles E. Wier (A.B. '43; A.M. '50), Geologist and Head of the Coal Section, Indiana Geological Survey, has been elected Secretary of the newly-formed Group on Coal Geology of the Geological Society of America.

Dr. William Wayne (A.M. '50; Ph.D. '52), Geologist and Head of the Glacial Geology Section of the Indiana Geological Survey, has been elected Chairman of the Geography and Geology Section of the Indiana Academy of Science of 1955.

Lowell Gladish (B.S. '54) is serving a hitch in the service. He was an officer in the R.O.T.C. at I.U. before reporting to Officer's Camp.

People from Indiana University who attended the Oil Finders' Convention in New York, March 28-31, were the following: A. C. Brookley, Jr., Paul Raymond, T. A. Dawson, Dr. J. B. Patton, Dan Sullivan, Albert Gutstadt, Dr. Haydn Murray, Prof. R. E. Esarey, Jack Warren, and Dr. J. J. Galloway. Other former I.U. people there, but who did not attend the Indiana Luncheon, included: Dr. H. N. Coryell, Raymond Robbins, and R. B. Sublett.

Dr. E. R. Cumings celebrated his 81st birthday anniversary on February 20. He and Mrs. Cumings are reasonable well and are living comfortably at 54 Liberty Extension, Painesville, Ohio, and in the summer they live in their cottage at beautiful Cumings Homestead, near the house in which he was born, on the shore of Lake Erie, 40 miles northeast of Cleveland, Ohio. Their summer address is Cumings Homestead, North Madison, Ohio. Dr. Cumings is much pleased to hear from his old students and friends, and anyone who writes to him can expect an answer soon.

Orville L. Bandy (Ph.D. 48) is on sabbatical leave from the University of Southern California, and is doing research on foraminiferal ecology for an oil company.

George (A.B. '37; A.M. '39) and Mrs. Heap drive over regularly from Sullivan, Indiana to attend the Auditorium Series, which shows that some oil people are interested in cultural things.

Those who attended the Indiana University Alumni Luncheon in New York on March 29 were as follows: Frederick Schweers, Thomas A. Dawson, Thomas C. Hiestand, Melvin D. Mauck, Haydn Murray, Dan M. Sullivan, B. Dale Kline, Kenneth M. Waters, J. J. Galloway, W.S. Armstrong, representing the University, J. B. Patton, W. A. Thomas, Marion Fidler, Richard H. Schweers, Herbert H. Bradfield, Ralph E. Esarey, John R. Reeves, Glenn G. Bartle, and Robert R. Shrock.

Reports are that W. M. Tucker (A.B. '08; A.M. '09; Ph.D. '16) is not in too good health. He would probably enjoy hearing from his old friends. We do not have his street address, but cards or letters sent to Geology Department, Fresno State Teachers College, Fresno, California will undoubtedly find their way to him.

Victor Barua (A.M. '50), who is employed by the Northern Peru Mining and Smelting Company at Pacasmayo, Peru, writes that he now has three daughters. His present position is that of Chief of the Geologic Department of the Chilete Mine.

Ross Hickam, an institution in Owen Hall, still serves "Men's Coffee" and Boy's Coffee" at the coffee hours in the department. He also has become something of a worker in semi-precious stones.

Paul D. Proctor (Ph.D. '49), formerly Associate Professor of Geology at Indiana University, has co-authored a most successful booklet entitled "Uranium, Where It Is and How to Find It".

Former students of Professor Roger E. Deane will be interested to learn that he has returned to the land of the Maple Leaf as a member of the faculty of the University of Toronto. Professor Mead is now teaching Structural Geology and Professor Donald E. Hattin has taken over Historical Geology.

The Geology Wives Bridge Club still thrives; members now play four bridge hands at their bi-monthly meetings.

A geology major, Brock Strom, is a member of the I.U. football squar; and he has high grades too!

Professors Deiss, Lowell, and Perry try to keep slim by swimming; Professors Murray and Hattin by playing handball; but Professor Thornbury just doesn't try!

The geology library continues to extend more and more into the uppermost hallway of Owen Hall.

John Cleveland (A.B. '54) is now carving out a career in military life and claims that the financial side of the service is very satisfactory.

Phil Lane (A.B. '49) has been transferred to the Continental Office in New Orleans.

Beryl and Earl Newcomer (A.B. '49) still live in Jackson, Mississippi, which they claim is the "garden spot of the South". Earl is with The Texas Company.

After looking around for awhile, Frank Rago (A.M. '52) is now doing well site work for the Texas Company as Casper, Wyoming.

Courtney Waddell (A.B. '38; A.M. '49; Ph.D. '52) has a research position with Lane Wells in Los Angeles. Lola writes that she hopes to become an artist. They live in Pasadena.

Ray Parker (A.M. '50) left Washington, D.C. April 4 for Santiago, Chile, where he will work with George Erickson (A.M. '49) for the U.S.G.S. Their work consists in part of advising the Chilean government in setting up a geological survey.

Dick Erd (A.B. '50; A.M. '54) is working as mineralogist in the Geochemistry Section of the U.S.G.S. in Washington. He and Pat and the two younger ladies in the family live in Silver Spring, Maryland, but will move by next fall to a new house they are building, also in Maryland.

Helen Beikman (A.B. '52) is working in the Fuels Branch of the U.S.G.S. in Washington, D.C.

Norbert Parker (A.B. '36) is reported to be located at Indianapolis and connected with Mobile Drilling Company on a consulting basis.

Frank Spencer, who spent several years in Bloomington with the U.S.G.S., has left Denver and is in Washington, D. C., preparing to go to the Phillipine Islands.

In September, Professor John Patton had a brief visit with Professor and Mrs. E. R. Cumings at their home on Lake Erie at Painesville, Ohio.

Several members of the Bloomington delegation visited with Walter Small at the A.A.P.G. meeting in New York. Mr. Small spent several years in Bloomington with the Husky Oil Company. The Smalls spent last summer in Europe and are now at Cooperstown, Pennsylvania.

Ray George (B.S. '51), who has returned from Japan, visited the department during the winter.

B. J. (Tex) Worthington (B.S. '52) returned from Los Angeles to visit in Bloomington in early April. He is associated with his brother in the automobile business and is expecting to spend most of his time in geology in the near future in connection with a private oil company that he will form with his brother.

Herb Merrill (A.B. '39), after several years in the English Department at I.U., has joined the English faculty at Wittenburg College, Springfield, Ohio.

John Uhl (A.B. '40) is employed by the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis.

A Christmas letter from the Vitalianos indicated that they are thoroughly enjoying their stay in New Zealand. They are living at Blenheim in the Wairau Valley, which is near the north end of South Island. Apparently, outcrops are scarce and most of Charlie's collecting has to be done from a boat, since most of the rock exposures are to be found in shoreline cliffs.

Joseph St. Jean (A.M. '53), who expects to receive his Ph.D. degree in September, 1955, has accepted a teaching position for next fall at Trinity College in Hartford, Connecticut. Joe expects to find time to continue his studies of the stromatoporoidea.

From April 14-19, 1955, Professor Hattin conducted an extended field trip through the Ozarks, western Kansas, and northern Oklahoma. The seventeen students who took the trip saw sections ranging in age from Pre-Cambrian to late Cretaceous. The caravan consisted of three carryalls. Expenses were kept to a minimum by camping in state and municipal parks. From May 8 to 16, Professor Hattin, along with five students, made a trip to the Badlands of South Dakota to collect vertebrate fossils for use in the Historical Geology class. The party examined exposures of Pre-Cambrian to Cretaceous age enroute.

THE GEOMORPHIC VIEWPOINT

After writing his Principles of Geomorphology, your editor found that he had one short chapter left over. Since he doesn't know what else to do with it he is passing it on to you (royalty free) with the hope that the philosophy expressed in it may appeal to some of you.

As for most everything else, the Greeks had a name for the study of land forms. They called it Geomorphology. Thus, those geologists who spend their time traveling around the country catching glimpses of the landscape between road signs and hamburger stands are to this day called geomorphologists. Other geologists have been known to call them by other names. Since the geomorphic viewpoint is somewhat different from that of other geologists, it is perhaps appropriate to look further into what the geomorphologist really studies, hoping thereby to understand somewhat better his viewpoint.

The features which comprise the surface of the earth take many different forms but essentially they consist of numerous bumps and holes. Some of these are dry, some very dry indeed; some are moist; some are wet part of the time and others are simply all wet.

As the middle part of his name implies, the geomorphologist is above all a student of forms and since there are many kinds of forms there are likewise numerous types of geomorphologists. Some like to study the effects of air in motion, particularly hot air, and they have even been accused of emitting some themselves. This type of geomorphologist likes nothing better than to play with sand piles and most especially big gobs of sand called dunes. Although he is most interested in those forms which may be seen in deserts, he is not adverse to observing those which may be seen to good advantage on most any street corner on a day when the wind is most effectively carrying on its geologic work.

There is another type of geomorphologist who believes that you have to look below the surface to see the real meaning of things. He is a somewhat distinctive individual who can be distinguished from others of his clan by numerous unusual characteristics. Among the more striking of these are his caved-in appearance, his susceptibility to sinking spells, the habit of repeatedly swallowing, a constantly worried look

as if he were lost in some blind (v)alley, and a tendency to "hum" to himself. From the way he walks you can tell that he has fallen arches and by the way he eats it is clear that he does not have natural bridges. Some have actually been accused of digging holes for streams to fall into, but I personally have never put much credence in the story that one was actually seen to push a stream into a swallow hole. It is easy to get a rise out of them if you accuse them of being part of an underground movement.

Some geomorphologists seem to get the most pleasure out of studying glaciers. This seems rather strange to other geologists who look upon glaciers as frozen assets at best. You can usually spot a student of glaciers by the icy stare he gives you. He never seems to be able to make up his mind as to whether he is coming or going and like the glaciers which he so adores, he is forever advancing and retreating. He is likely to "drift" up to you and ask you where you "kame" form and "un-loess" you "till" him not to do so, he will "horn" right into your conversation.

Other geomorphologists are most interested in rivers. Many generations of study have been devoted to rivers and it has been found that without exception a river runs downhill and the faster it runs the sooner it gets to the bottom of the hill. This habit of running downhill has been attributed by some to the fact that the river possesses a gradient, but others are inclined to believe that the river has got into a rut and does not know what else to do.

Geomorphologists always seem to be trying to get rid of streams and valleys. They steal them - sometimes referred to in more refined terms as piracy - hang them, drown them, divert them, behead them, and sometimes simply lose them. After all of the valleys are done away with by one devious means or another, what is left is called a peneplain. Occasionally, though, there is a shortage of valleys and to have the proper number some have to be resurrected.

Rivers have many individual peculiarities which has lead to innumerable attempts to classify them. Of all the many classifications of rivers, the most useful one seems to be that which recognizes that basically there are three types of streams, sufficient, insufficient, and obstinate. The Ohio River during the 1937 flood was an example of an amply sufficient stream; the San Gabriel River of California (most of the time) is a good example of an insufficient stream; and the stream which insists upon pouring into your basement after each heavy rain despite all of your attempts to stop it is a good example of an obstinate stream.

Like some dice, streams are often loaded and their favorite load seems to be gravel. If a geomorphologist finds gravel on a hilltop with a peculiar color, feel, and smell he will invariably call it Lafayette gravel. It appears, however, that this is not ordinary stream gravel, but apparently was brought over from France by the Marquis de la Fayette and spread over the country as he traveled about addressing various service clubs. Thus, Lafayette seems to have started the habit of dumping things upon the United States, a habit which later became popular among most European countries.

The last group of geomorphologist worthy of mention consists of those geologists who devote their attentions to shore line features. These are the marine geologists, of which there are two subgroups; those who are particularly proficient in their field and those who are some what below par. The latter group is commonly referred to as submarine geologists. Many interesting things are to be found along shore lines. Particularly attractive to some geomorphologists are the various bars which are found there. There are many types of bars but the most frequented ones are the

longshore and offshore bars. Offshore bars are the more exclusive of the two, in part as a result of their inaccessibility, and hence are not as familiar to most geomorphologists as are the longshore bars.

The forms seen along the sea shore will stack up against those seen in most any other geomorphic environment. They are viewed to best advantage from about June 1 to September 1 (northern hemisphere, that is). On a windy day, they are really swell. Like many other features of interest to the geomorphologist, their forms may be classified as youthful, mature, and old. In general it may be said that the geomorphologist, and it is perhaps not too much to say other geologists as well, prefer the smooth flowing curves of maturity to the greater angularity of youth and the somewhat subdued forms of old age.

Having, thus discussed the various fields of geomorphology, we may now attempt to summarize the main points of this short essay. Briefly, they are these: the geomorphologist is primarily a student of forms, land forms among others; there are many kinds of forms, some poor, some good; and, if you want to see them to the best advantage you have to have the proper viewpoint. This is what we mean by the geomorphic viewpoint.

ALUMNI DIRECTORY

There is no alumni directory this year as it was decided to publish it biennially. If any of you failed to keep last year's directory and would like to have it, a few copies of last year's NEWS LETTER are still available. All you have to do is to write for one.