

faculty of the school may attend the final examination.

In 1911 a new course on the Conservation of Natural Resources was added, but was dropped a few years later. The 1911 bulletin contains a description of the department. The department contains all necessary apparatus for determination of minerals. Collections include 250 species of minerals. Crystallographic collections include about 250 wooden and plaster models. Geographical studies include a large series of maps, charts, models, photographs and lantern slides, as well as a complete set of meteorological instruments. Models include the Jones relief globe, the Howell model of the United States, Harvard geographic models and many others. Over 2000 lantern slides are available, many illustrating Indiana geology and geography. Fossil collections include both biological and historical collections, with especially large collections from Indiana and from the Upper Carboniferous of Kansas, Oklahoma, and Texas. The collections are especially rich in young individuals of bryozoa and brachiopods and a collection of over 3000 thin sections of fossils, mostly bryozoa.

In 1917 IU abandoned the long-used three term year, and a new two term, semester, calendar was adopted. Fall term was from mid-September to early February. Spring term was from early February to the end of the first week in June.

Both Cumings and Beede were very active in research during the early years of the 20th century. This in spite of a heavy teaching load.

Cumings specialized in paleontology and stratigraphy, especially on fossil bryozoans and on Ordovician and Silurian rocks and fossils of Indiana. Cumings was noted as an early student of colonial growth in bryozoans using thin sections and he amassed a collection of many hundred thin sections of these fossils. This emphasis on microscopical detail was passed on to his student, J. J. Galloway, who used thin sections to study foraminifera and stromatoporoid sponges.

In addition to numerous papers on bryozoans Cumings (1908) published a massive 585 page study on the stratigraphy and fauna of the Upper Ordovician rocks of Indiana. In the Cumings and Beede volume on the fauna of the Salem Limestone (1906) Cumings did the systematics of the bryozoans, gastropods, cephalopods and trilobites. Beede did the echinoderms, brachiopods, foraminifera, corals, pelecypods and worms. Essie Smith's thesis on Pentremites was also published at this time. E. B. Branson contributed a section on the fossil shark teeth found in the Salem.

In addition to his research in Indiana, part of which was paleontologic but also included papers on karst, ground water, iron ores and general geology, Beede maintained a continuing interest in Pennsylvanian and Permian stratigraphy and fossils of Kansas, Oklahoma, and Texas. He did field work and directed graduate research in this area.

When Beede took leave of absence from IU in 1917 he went to Texas with the Bureau of Economic Geology. He apparently was to succeed J. A. Udden as State Geologist but this never occurred.

Beede resigned from the Texas bureau in 1922 to become a geologist with Empire Gas and Fuel Company. Beede returned to Indiana as a professor of geology for three years, from 1928 to 1931 while Cumings held a Waterman research fellowship. When Beede took leave the University hired William N. Logan as an associate professor, especially to teach courses in economic geology. Logan was a native of Kentucky, and was educated at Kansas University and the University of Chicago. He had been chair of the geology department at the Agricultural and Mechanical College in Mississippi from 1903 to 1916, and State Geologist of Mississippi. His research was on Mesozoic stratigraphy, clays, marls, and ground water prior to coming to IU. Logan has been characterized by Cumings as a kindly, well-bred, patient and good-humoured man who always typed his own manuscripts.

#### EARLY STUDENTS AND GRADUATE ASSISTANTS AT IU

Among the students in the first decade of the 20th century Essie Alma Smith was listed as a graduate student in philosophy in 1903, but she later switched to geology and received the first Masters degree for a woman in geology at IU with her thesis on the ontogeny of the blastoid Pentremites. The thesis was published in 1906 in the massive study of the fauna of the Salem Limestone that was a cooperative work with Cumings, Beede, and E. B. Branson. The only undergraduate major was a senior, William McClurkin Carithers of Princeton, IN. In 1905 the only major listed is senior Louis Clinton Ward from Batesville, IN. By 1909 and 1910 William Motier Tucker is a graduate student and teaching

fellow.

Over the early years of the department several young students were employed to help with the teaching duties. Today these students would be termed associate instructors (A.I.s) at IU, but a variety of titles were used in early years.

There were no student assistants in the department from 1899 to 1909. William Tucker was a teaching fellow for 1909-1910. He later returned as a faculty member for eight years, from 1920 to 1928.

Jesse James Galloway became a teaching fellow for two years, 1911-1913 and was then an instructor for three years, 1913-1916. Galloway's Masters thesis was on the fauna of the Ordovician Tanners Creek section in southeastern Indiana. Galloway expanded this thesis into a PhD dissertation awarded in 1913. Halbert Bybee was a research fellow for 1911-1912 and completed a Masters thesis on the aviculidae [bivalves] of the Permian, a thesis clearly done under Beede's supervision. He later did a doctoral thesis on the 1913 flood in southern Indiana, which was published jointly with Clyde Malott in the Indiana University Studies series (Bybee and Malott, 1914). During the month of March, 1913, Bloomington had a total of 13 inches of rainfall, including 9.2 inches from March 23-27, which is when the flooding occurred. Shoals was the only other rain gauge in southern Indiana that recorded a slightly higher amount of rain.

In 1915-1916 Clyde Malott and Horace Coryell were both assistants. The next year Malott became a tutor and Coryell a

teaching fellow. It is not clear what differences there may have been among titles like tutor, assistant, and teaching fellow. Malott completed his Masters thesis in 1915 on the history of glacial Lake Flatwood, between Ellettsville and Spencer. Coryell did his thesis on the bryozoa of the Black River and Trenton limestones in New York State.

In 1915 Thomas F. Jackson was a teaching fellow for one year and Fred Breeze was a tutor for the Spring semester in 1917. Jackson did both Masters and PhD theses on the Mississippian and Pennsylvanian fossil plants of Indiana. William Tucker did his PhD thesis on the hydrology of Indiana.

#### THE CUMINGS-BRYAN FILES

Much of what we can learn about the Department of Geology during the early decades of the 20th century is contained in the files of the University Archives, especially the memoranda back and forth between Cumings and President William Lowe Bryan. These files give insight into Cumings' character and his interaction with others in the department and the university. This section will summarize interesting items taken from these files for the years from 1904 to 1919.

In 1904 one of the undergraduates, A. B. Reagan, collected bones of a mastodon in South Dakota and shipped the specimen back to IU. The freight bill was \$45, and the specimen is said to be fairly complete. What happened to these bones is not known.

Cumings was married in 1905 and his new wife, Frances, helped Louisa Goodbody find rooms in Bloomington upon her arrival

in Bloomington from Swarthmore College.

In 1906 Cumings contributed \$5 towards the relief fund for sufferers from the San Francisco earthquake.

In 1909 both Cumings and Beede served on a committee to select an independent water supply for the University. Bloomington had serious water shortages sporadically for a good many years and would continue to have water problems for many years to come, until Lake Monroe was constructed. Cumings also served from time to time as an advisor for the City of Bloomington water supply. The University did construct its own small lake, University Lake, now on the IU golf course, as a water supply. Cumings discussed the dam and impounded water of this lake in considerable detail, including a cross-section of the dam and three photographs of the dam and pond, in an article on municipal water supplies in south-central Indiana in the Indiana Academy of Science Proceedings (Cumings, 1912).

In 1909 Cumings strongly urges Bryan to have the faculty vote, in the upcoming election, in support of Monroe County remaining a dry county.

In his annual report to President Bryan in 1910, Cumings reports on summer field activities. Beede is working in Texas and Kansas and has an undergraduate student, Harry Johnston, with him as a field assistant. Cumings is working in southeastern Indiana on Ordovician rocks and has graduate student J. J. Galloway as an assistant. One graduate student, William Tucker, is in South America. Frank Greene is now with the Missouri Geological Survey

and L. C. Snider is now with the Oklahoma Geological Survey. Galloway is also a field assistant with the U.S. Geological Survey in Wyoming and returns to IU in the Fall as a teaching fellow.

The next year, 1911, Cumings asked for money to prepare a darkroom for the geology department. Geology is the only science department that does not have a darkroom. They have to beg use of other departments' darkrooms. These requests go on for quite a few years before the department is finally allowed to prepare a darkroom.

This same year the University decided that all faculty members should also be alumni of the University. They did this by conferring honorary Master's degrees on all those faculty who were not already alumni of IU. Thus, in June, 1911 both Cumings and Beede received an A.M. privatim degree from IU.

In 1912 Cumings reported to Bryan that the University "pond" is designed to provide 10,000 to 50,000 gallons of water a day but that the University is using 90,000 gallons a day. Cumings also indicated to Bryan that the department needs to hire a third full-time faculty member in the area of economic geology in order to make fundamental studies of the natural resources of Indiana. Nothing came of this request for over six years.

In 1913 the departmental budget was \$250, the geology library budget was \$200 and the research budget was \$600 to \$700. This latter item covered expenses of summer field work during which students received their field training, and faculty members

were able to work on research projects of interest.

The University officially abandoned the ranks of teaching fellow and research fellow at this time. All academic employees below the rank of instructor were either to be Tutors or Assistants. These were graduate students who assisted in the laboratories, in grading papers, and in preparation of materials for lectures and laboratories.

At this same time the University began requiring that all PhD students post a bond insuring that their dissertation would be published. The bond was for \$200, a sizeable sum of money for that time. Upon proof of publication the bond would be refunded. If, after a suitable length of time, the thesis was not published the University would use the money to publish and distribute a short version of the thesis.

In 1915 Cumings is once again involved with the city water supply. He states that the new pond holds 10 million gallons and that other ponds are empty. He also issued a four page report to the Board of Trustees saying that there were problems with the new dam and spillway at Leonard Springs and that the amount of water now held is between 180 and 200 million gallons. The pond was built in an area of limestone karst and sinkholes and perpetually leaked water.

Clyde Malott and J. J. Galloway are both assistants in the department in 1914-1915. Galloway had received his PhD in 1913. Malott resigned and accepted a teaching position in Fort Wayne where he stayed for one year. Galloway expected to get a position

at the University of Illinois but that did not materialize. By the summer of 1915 he was with the Tennessee Geological Survey in Murfreesboro, TN and he asked to be re-appointed as an instructor for the 1915-1916 academic year. Apparently Cumings made an offer to Charles Shannon to return to IU to teach in economic geology but he did not accept the offer.

With respect to final examinations at this time, Cumings reports that all questions shall be printed by the University and the University shall supply blue books. No other books or papers are allowed in the examination rooms. The Registrar shall insure proper spacing of the seating and all sections shall have an instructor as supervisor. The honors system is in effect and any cheating must be reported to the Dean. Finally, whether or not the instructor regards the examination as important or not, he should conduct the exam as if it were important.

In 1915 Halbert Bybee and G. C. Mance completed requirements for the PhD degree and Thomas F. Jackson would complete the requirements the next year. Bybee was an instructor at the University of Texas in 1914-15 and would hold the same position at Washington University the following year. He eventually became an important figure in the oil industry.

Mance was basically a geographer and had completed a study of power economy and the elimination of waste in the quarry industry. Several students (Malott, Mance, and Johnston) were helping Beede in summer mapping of the Bloomington quadrangle. Graduate student Horace Coryell was engaged in a soil survey for

the Indiana Geological Survey and Galloway was working summers for the U.S. Geological Survey mapping the Louisville, KY quadrangle.

Cumings proposed to hire former student Luther C. Snider, who was then assistant State Geologist in Oklahoma, as an assistant professor of economic geology at a salary of \$1500. He was unsuccessful at attracting Snider and the next year recommended hiring William N. Logan for this position.

Cumings was very frugal and rarely ever asked for any kind of increase in departmental funding. He apparently prided himself in returning to the University some unspent funds each year--not exactly the fashion these days nor a very good way to get an increase in budget. Cumings very reluctantly asked President Bryan to approve purchase of a second-hand, but re-built, typewriter for the department. Cumings had rented machines many times or they had to use an old worn out machine. The cost would be \$60. For a good many years all of Cumings' memoranda to Bryan had been typewritten. He states that both he and Beede had to loan their machines to the students, so apparently they both had their own personal typewriters. There is no evidence that the department had a secretary although there apparently was a campus-wide typing pool. Cumings must either have typed these memoranda himself or used the campus typing pool. The machine he requested was apparently for student use in preparing theses and manuscripts for publication.

In 1915 there were four graduate students--Horace Coryell,

who worked for the Tennessee Geological Survey that summer, William Tucker, who was returning to IU after an absence of several years (A.B. 1908, M.A. 1909), Clyde Malott was listed as a student but he was still teaching in Fort Wayne. Another student named Keck, who apparently did not graduate, was supposed to work on the clay deposits of Indiana, Malott was working on the driftless area, the south-central part of Indiana never covered by glacial ice; Professor Beede spent the summer mapping the Clay City quadrangle south of Brazil, IN, an important coal producing area. Cumings says that Fred Breeze, a recent graduate of Purdue, will become a graduate student next year and will study ground water resources. It is quite clear that by this time there is an ever increasing emphasis on various economic aspects of Indiana geology, ranging from coal to soils to clays to building stone to ground water.

In 1916 fellowships are offered to four graduate students: Coryell, mentioned above; Fred Breeze, D. C. Warren, and Eula Frances Thompson. Neither Breeze nor Warren received a degree from IU. Breeze later was a physical geographer and physiographer at Indiana State University in Terre Haute.

Once again Cumings and Bryan are upset about the county option law for liquor. The "Wets" engineered an option election for September 7 when many University members would be absent. Cumings would be out of town but urged that all members in town vote. He says, "whatever the evils of the blind tiger we know that the viles of the saloons are far worse". Perhaps the blind

tiger is moonshine or bootleg liquor.

In 1917 Beede was on leave of absence and Clyde Malott was still in Fort Wayne. The department was short-handed and hired Louis Roark who was doing field geology in 1916-1917 with Gypsy Oil Co. Roark had been an assistant professor at the Agricultural and Mechanical College in Hattiesburg, Mississippi from 1913-1916 and had known William Logan there. They also had Fred Breeze as Tutor, and they brought in Clara G. Mark from Ohio State University as an instructor. G. T. Boruff became a chemical assistant for Logan.

Now that World War I was in progress the War Department required that the University report the names of all male members of the faculty who are within the draft age. Cumings registered on September 12, age 44.5 years. The limit was 45 years. At this time military drill on campus was held at 7:30 am with classes starting at 8:30, 40 minutes in length, with 10 minutes between classes, resulting in a staggered time schedule throughout the day.

During the summer of 1917 and in other summers Cumings corresponded with Bryan from Ohio where he and Mrs. Cumings had a summer home (the farm on which Cumings was born) at North Madison, OH, east of Cleveland, which he called Camp Cumings. The summer of 1917 Cumings was laid up for many weeks with a bad knee and torn ligaments. Mrs. Cumings was also injured with burns, much worse than they had at first supposed. Their neighbors were looking in on them and helping take care of them. During the

school year the Cumings lived for many years at 327 East Second Street.

In 1918 William Logan asked that a student named Papish be appointed his assistant, the latter to study kaolin deposits in Indiana. Papish did not complete a degree. At this time the departmental letterhead listed two Fellows, despite the fact that the University had earlier discontinued this title. For 1918 they were William Tucker and Frank Greene. These may have been research appointments by Logan with the Indiana Geological Survey.

Also, in 1918 Howard Legge was appointed preparator for the department. He had been a janitor in the Department of Chemistry in Science Hall. He was to receive, install, arrange and label collections, and look after the map collection and other teaching collections. Legge would serve faithfully in the department for 25 years until his retirement in 1943. Until Charles Deiss became chair in 1945, Legge was the only staff person in the department.

At the end of the 1917-1918 year Louis Roark left IU. According to University files he accepted a commission as a 1st Lieutenant in the U. S. Army. However, the Cumings-Bryan files seem to indicate that he may have been let go because of an anticipated decrease in enrollment because of the World War. The Department of Geology found that their enrollment did not decrease and they became in sore need of help. Cumings arranged for Mr. Senour of the English department to teach geography and for one man outside the department to teach one section of

introductory geology. There was a total of 260 students enrolled in geology courses.

Mrs. Eula Davis McEwan (nee Thompson) received her PhD in 1918 (A.B., 1913, M.A., 1914) and took an assistant professorship position at Northwestern University in Evanston, IL. She was the first female PhD from the department and for many years would be the only such doctoral graduate. She studied Ordovician stratigraphy, bryozoans, and brachiopods near Madison, IN.

William Tucker is now an assistant professor at Ohio State University and is being considered as head of a new, separate, Department of Geography at OSU. Galloway is now on the faculty at Columbia University and has taken charge of the graduate courses heretofore offered by Dr. Grabau, who is on leave of absence. As a German, Grabau experienced extreme difficulties in the United States during World War I. He ultimately left the U.S. and founded the Geological Survey of China. Later at Columbia Galloway introduced the first course in micropaleontology taught in the United States.

In 1919 faculty salaries are as follows: Cumings, \$3300; Logan, \$3000 authorized, presently \$2300; Malott, authorized, \$1800, presently \$1400; and a newly appointed assistant professor, S. S. Visher, \$1700. The preparator, Legge, received \$840 per year and Paris Stockdale, graduate student and assistant, \$200.

By this time William Logan was the State Geologist. The old system of electing this official had been abandoned. Logan felt

that he should be treated as a head of a department or as director of a division, rather than just a professor.

During this year Cumings had a set-to with the Student Affairs committee, of which he had been a long time member. This had to do with an athlete and tutoring for athletes. Apparently Paris Stockdale tutored a Mr. Pierce, an athlete, without getting approval from Cumings. The Bursar sent Cumings a bill to pay Stockdale out of departmental funds. Cumings thought the tutoring should be paid for out of the income of athletic contests. Apparently he took this up with the Student Affairs committee and was voted down, upon which he resigned from the committee and wrote the following memorandum to the President:

"For twenty years I have fought with every ounce of strength for high standards of scholarship and for a single standard applying to all students regardless of athletic affiliations or influential friends. Last Spring I thought at last the long hard fight was won, but the experience of this morning [dated Sept. 26], when once more the committee yielded to the old pressures, has convinced me that I can no longer claim it of myself nor be asked by others to continue the fight. I ask now only to be let alone in the congenial work of my department and my specialty. I ask that I may sever all connection with the administrative problems of the university, including the secretaryship of the faculty [Cumings had been secretary for the faculty since 1904] and all administrative committees and that I may devote to my own field what energy a disillusioned and embittered man may summon".

There are no other references to this problem but Cumings did not resign the secretaryship of the faculty so some amends must have been made.

#### THE CUMINGS-MALOTT YEARS--1920-1945

##### The Decade 1920-1929

The ten year period from 1920 through 1929 was remarkably stable for the department, in terms of the faculty, the students

and the curriculum.

At the beginning of the decade there were two professors, Cumings and Logan; and two assistant professors from previous years, Malott and Visher. Malott had received his PhD from IU the year before, 1919, on the physiography of the "American Bottoms" in Greene County. Stephen Sargent Visher received his B.S. in 1909 and his M.S. in 1910 from the University of Chicago. He then received a Masters degree from the University of South Dakota and the Ph.D. from the University of Chicago in 1914. Visher was a geographer and remained on the departmental faculty through the period when it was a Department of Geology, until 1931 when it became a Department of Geology and Geography, until 1946 when the two disciplines were separated into two distinct departments. Interestingly enough, when John Patton published a chart of all members of the departmental faculty through 1977 in the departmental newsletter, he omitted Visher, and all other geographers, despite the fact that they were bona fide faculty members of the Department of Geology. In 1920 no instructors--graduate student teaching assistants--were listed.

During the 1920-21 academic year Visher was on leave, John Reeves, a graduate student, was hired as an instructor beginning August 1, 1921, and a new assistant professor, William Motier Tucker, was hired from Ohio State University. Tucker had received all of his degrees from Indiana, his A.B. in 1908, his M.A. in 1909, and his PhD. seven years later, in 1916. Tucker later became chair of the geology department at Fresno State in

California.

In 1922 Malott was promoted to Associate Professor and Visher was still on academic leave. Otherwise there were no changes in the faculty. The next year, 1923, Visher and Tucker were both promoted to Associate Professor.

Two new members were added to the faculty in 1924, increasing the size from six to eight. Jesse Elmer Switzer was hired as an assistant professor in geography. He had received his B.S. from the University of Chicago in 1911 and his PhD from Clark University in 1923, being hired straight out of graduate school. Arch Rombaugh Addington, who had received his A.B. from IU in 1922, was employed as an instructor while he pursued graduate studies.

In 1925, Clyde Malott was promoted to professor, Switzer was promoted to associate professor after just one year at the assistant professor level, and John Reeves was promoted from instructor to assistant professor although he was absent on leave for 1924-1925. A new graduate student instructor was added to the faculty--Ralph Emerson Esarey, A.B. 1922; M.A., 1923, Indiana University). Esarey was to have a long career with the department and with the Geological Survey. The faculty roster was the same for the next year, 1926, except that John Reeves had resigned.

In 1927 Tucker was on leave for the academic year and Carl Arthur Lamey was a new instructor. He came to IU from Northwestern University, where he had completed a Masters degree in 1927; he did his undergraduate work and a Masters of

Engineering at Michigan College of Mines (B.S., 1925; M.E., 1925). He later became a professor at Ohio State University.

In 1928, Joshua Beede returned to teach at IU as a professor, joining Cumings, Malott and Logan at that rank. The geographers Visher and Switzer remained at the associate professor level, and there were now four instructors, although two of them, Addington and Esarey, were absent on leave. In addition to Lamey, William David Thornbury became an instructor in geography. Bill Thornbury was to become a long-time member of the faculty and a distinguished geomorphologist, eventually replacing Clyde Malott in this field. Thornbury received his A.B. degree from IU in 1925 and his M.A. from Colorado University in 1928. For many years Thornbury was listed as a professor of geography and he taught many geography courses. However, he really was essentially a geologist and when the new Department of Geography split off from the Department of Geology in 1946, Thornbury remained with the geologists and then began to teach geomorphology, glacial geology and other courses that he ultimately produced into a very well-received and widely used textbook on geomorphology.

Between 1921 and 1922 the department officially changed from being a unit in the College of Liberal Arts to being a unit in the College of Arts and Sciences. At last it was finally recognized that the college did include some science departments.

During this decade the department consistently had only a few geology majors, especially at the undergraduate and doctoral

levels. Only two students graduated with A.B. degrees in 1920 and during the next nine years the number of bachelors degree grantees ranged from four to 11, with an average of slightly over six a year.

During the decade a total of 19 students received M.A. degrees, ranging from none in 1928 to four in 1923. The theses by these students fall into two general categories. Many of the students selected research that had an economic slant, especially concerning the economic geology of Indiana. This was seemingly promoted by financial support from the Indiana Geological Survey through Professor Logan. Other students studied physiography and geomorphology under guidance of Clyde Malott, who was an exceptionally active and able young researcher and teacher. Interestingly enough very few students chose to study with E. R. Cumings, despite his prestige in the areas of stratigraphy and paleontology. One very notable exception to that generalization was Robert Rakes Shrock, whose work with Cumings on Silurian reefs of northern Indiana was of world class quality. Shrock, in 1928, and John Robert Reeves, in 1923, were the only two students to be awarded doctorate degrees during the decade. Shrock later was on the faculty at M.I.T., and was chair of that department for many years. He has written a detailed, two volume, history of that department.

Thus there was a significant shift in emphasis from earlier times towards the Masters degree as the terminal degree and towards technical research of practical value.

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### Sigma Gamma Epsilon

In 1926 the students in the Department of Geology petitioned to form a chapter in the newly established earth science fraternity, Sigma Gamma Epsilon. Indiana University became Rho chapter in this organization and continued this association for many years, with two lapses, one during World War II and one during the turbulent days of the 1960s. The fraternity publishes a journal, the Compass, that for many years included Chapter Letters and these letters from Rho chapter constitute an important source of information about student activities. The letters will be summarized as appropriate.

The Rho chapter was installed on January 15, 1926 by Dr. W. H. Twenhofel, University of Wisconsin, founder of the fraternity when he was at Kansas University. Twenhofel came to Bloomington from the University of Wisconsin. Eleven charter members were initiated: Arch Addington, Ronald Bartle, Floyd Childs, DeVere Carter, Ralph Esarey, Raymond Hunt, John Organ, William Rawles, Robert Shrock, Franklin Striker, and Lester Wise. By March, 1926 four more members were added: Philip Stroup, George McFarlin, Arthur Moore and Wilber Bradt. Six faculty members were inducted as associate members: Cumings, Logan, Malott, Visher, Tucker, and Switzer. A junior member, Hugh Trager was also inducted. Two members, Carter and Striker had left by March for employment in Texas with Empire Fuel and Gas and Roxana Oil respectively. Carter gave a talk on the Mexia Fault Oil Field, Cumings talked

on the history of geology, Dr. H. T. Davis gave a talk on the transfer of energy in its relations to geology and H. T. Briscoe talked on the origin of dolomite. Meetings were held every two weeks on Tuesday evenings. By the end of the year, in November, 13 members had left school by graduation or failure to return after the summer and there were only three student members left: Esarey, Shrock, and Addington. Two former student members were living at home, one was selling life insurance, one was working at street construction in Bloomington, one was in Venezuela with Gulf Oil and one was with Pathe Films in New Jersey.

By the end of 1927 several new members had joined. A field trip to the American Bottoms was led by Malott and a fall picnic was held at Cascades park with about 75 in attendance. A horseshoe pitching tournament was held and Esarey, a well-known athlete, was the winner.

The society sponsored several talks for which the speakers were chosen outside the department. Thus, faculty in physics, biology and metallurgy gave talks. Three former members were working on PhDs elsewhere, Stroup and Rawles at Wisconsin and McFarlin at the University of Chicago. In 1928 the chapter letter reports that Professor Tucker had resigned to become head of the geology department at Fresno State College. The next year Tucker hired Arch Addington as an assistant professor.

Several of the students were employed during the summers of 1926 through 1929 by the Indiana Geological Survey, doing various kinds of field work.

In December, 1928 the chapter held a Christmas party for students and faculty. Several "geological games were inaugurated to the amusement of all". This is the first record of a departmental Christmas party, which is a long-standing tradition in the department.

In 1929 it is reported that Ralph Esarey is now working for Texana Oil and was an official at the Washington Regional High School basketball tournament. Esarey was an all-state forward in high school and a member of the IU varsity team.

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Rather than detail changes in course offerings and degree requirements for this 10 year period, the situation at the beginning of the decade, in 1920, and at the close of the decade, in 1929, will be given.

In 1920, 11 undergraduate courses were given, and a student had to accumulate 30 hours of geology credit for the A.B. degree. A student specializing in stratigraphy and paleontology did 20 hours of chemistry, zoology, or botany or, if concentrating in physical, economic, or mining geology, 20 hours in chemistry, astronomy and physics. Interestingly enough there were no requirements in mathematics, and mathematics was not required for the general college standards, although it was part of the general science and mathematics requirement.

Most courses were available at 5 credits per term, if they met daily or for 2-3 hours in the afternoon. For instance, General Geology met at either 8 am or 9 am daily, both semesters,

and was a 5 credit course each semester. For some courses, such as Systematic Paleontology and Advanced Field Work (Geological Survey) credit was to be arranged. Physical and Economic Geography were the only two geography courses. Some courses like Economic Geology were open only to seniors or graduate students. At the graduate level there were seven courses available, two of which were not listed for undergraduates--the Seminary and Research.

Summer school offerings were minimal: Economic Geography and Advanced Field Work.

In 1929, 13 undergraduate courses were listed. There were two General Geology courses, one a one-term course and the other a two-term course, presumably for majors. Geography courses were University Geography, Geography of Europe and Geography of North America. It is hard to know whether two courses in Conservation of Natural Resources should be counted as geography or geology classes. The numbering system now changed. In 1920, classes were cited as single or double digit--1, 2, 10 and so on. In 1929, the lowest number is 101. All undergraduate courses are either 100 or 200 level (lower classmen, upperclassmen) and graduate classes are 300 level. Mining Geology is now a graduate course and Advanced Field Work is given only in the summer.

A total of 10 courses were offered at the graduate level. The "opportunity is afforded for advanced work and investigation in stratigraphic geology, physiography, and paleontology, and in economic and geographic geology". Apparently one could not get an

advanced degree strictly in geography, despite the fact that two professors offered several courses in the discipline.

During this time there were no formal course requirements for either the Masters or the PhD degrees, although the successful M.A. candidate had to accumulate 30 hours of credit and the PhD candidate had to acquire 90 hours of credit and be in residence for three years. A reading knowledge of both French and German was required for the PhD. Apparently all or most of the credit hours could be acquired through enrollment in Seminary, Research, and Advanced Field Work.

#### The Decade 1930-1939

One of the changes that occurred during this time was a significant change in the name of the department. Despite the fact that courses in geography had been offered within the Department of Geology for many years, the title had not changed. However, in 1931, the University Bulletin, for the first time, gave the departmental title as Geology and Geography. Concomitant with that change students could, for the first time, have a choice of majors, either in geology or in geography, with different requirements for each degree.

The same statement that was made about the 1920s decade can also be made about the 1930s. Change in the department was slow but steady. Again, the faculty will be discussed first, followed by the students and then by the courses and curriculum.

During the first year, 1929-1930, Malott was on leave for the first semester. Instructor Ralph Esarey was on leave for the

entire year. Lamey was teaching Mineralogy and Conservation of Natural Resources. Thornbury was helping mainly with courses in geography. In addition to Economic Geology and Mining Geology, Logan was handling the Advanced Field Work as part of the Indiana Geological Survey, and this was given only in the summer session. In 1931 Professor Cumings was elected President of the Paleontological Society and also Vice President of the Geological Society of America, a significant double honor.

The next year Lamey had departed, Esarey had returned and no new instructors were added. Beede is listed as a professor but a footnote states that he is a research associate in geology with that rank. Previous bulletins did not make this distinction. During Beede's first year in residence upon his return in 1929, he is listed as helping teach the introductory general geology course, but in the subsequent years of his tenure Beede is never listed as being responsible for any specific course. He may have taken part in courses such as Research, where Members of the Department is the standard listing.

In 1932 one very important change took place: Professor Jesse James Galloway returned to his alma mater from Columbia University as a professor. Galloway had done all of his undergraduate and graduate work at IU, receiving his A.B. in 1909, an M.A. in 1911, and his PhD in 1913. He was one of E. R. Cumings' strongest students. Other changes included the departure of Joshua Beede, and Associate Professor Visher was on leave the first term. A new instructor was appointed for the first semester