THE MONADNOCK

of the

CLARK UNIVERSITY

GEOGRAPHICAL SOCIETY

" . . . the face of the land is changing, we can choose, perhaps for the last time, what we are to do with our land, our country."

1958 YEARBOOK OF AGRICULTURE

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MERRY CHRISTMAS

The staff of the Monadnock extends its best wishes for a very happy Christmas to all former and present members of the Graduate School of Geography. At this time, we also wish to thank all of those who have contributed so generously to make this magazine possible. Your response and support have been most gratifying. We wish to remind those members who have not filled in the questionnaire to do so, for this is our only way of maintaining contact among the members, and may we remind those who have intended to contribute, but have forgotten, to do so? This is your magazine and its success depends upon you.

CHRISTMAS GREETINGS FROM DR. VAN

Last year I sent my Christmas greetings from Switzerland. This year I am back at Clark. We are at home preparing for an old fashioned Christmas with a tree of real candles and the happy laughter of grandchildren.

As always, I send you, our Clark alumni, my best wishes, both for Christmas and for the coming New Year. My thoughts often go back to the old times when you were here and I want you to know that you are not forgotten but often remembered.

Also remember that what happens to you is also of concern to me.

S. Van Valkenburg

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THE VALLEY OF OAXACA

Joseph Hickey

Deep in southern Mexico in the mountains of Oaxaca there is an unusual basin named the Valley of Oaxaca. According to Dr. Jorge Vivo in his "Geography of Mexico" this northwest-southeast oriented valley is a synclinorium associated with the Late Cretaceous uplift of southern Mexico and the subsequent Cenozoic folding. Support for this argument is found by study of the courses of the local rivers such as the Balsas, Nochistlan, and Tehuantepec Rivers which in their upper reaches tend to follow the northwest-southeast trend of this mountain mass. The Valley of Oaxaca similarly determines the course of the upper Atoyac River, with the city of Oaxaca at the midpoint of the valley where the two main branches of the upper Atoyac meet and suddenly turn south through the mountains toward the Pacific. Thus this valley has a "T" shape, with the bar of the T the structural depression and the stem representing the streamcut gap through the mountains.

The Valley of Oaxaca stands about 5,000 feet high amid the complex Oaxaca Mountains. Its remote location has made it isolated and thus protected from the outside world. It is a high fertile pocket of land with a healthy, temperate climate, isolated alike from the influences of the highland basin Heartland of Mexico around Mexico City and from the coastal lowlands. Logically it seems the natural center of the Oaxaca mountains and indeed it has had this role. The remote Oaxaca mountains have been an area of refuge and the Valley of Oaxaca has been the node of the entire area since the earliest Indian days.

The Valley of Oaxaca since time immemorial seems to have been the home of the Zapotec Indians, the possessor of one of the greatest Pre-Columbian Indian cultures in Mesoamerica. On the summit of a mountain directly outside the present day city of Oaxaca, at the point where the two parts of the T meet, the Zapotecs built their capital, probably at least 2 thousand years ago. Their characteristic art forms were the so-called "danzantes", low reliefs carved on great stone slabs, named from their resemblance to dancing figures. This center of Zapotec culture, now known as Monte Alban, steadily grew in importance as the Zapotec culture entered its classic epoch, roughly between 500 and 1000 AD. This period was characterized by the carving of jade and by elaborate tombs, decorated with polychrome frescos. After 1000 the Zapotec culture began to decline and by 1300 Monte Alban was abandoned. This was probably due to the pressure of the invading Mixtecs from the Mixteca Alta highlands to the northwest.

The Zapotecs then moved their center southeast down the valley to Mitla, which was a great religious center until the coming of the Spaniards in the 16th century. This marked the end of the formal culture of the Zapotec Indian.

Since the Mexican revolution of the early 20th century a great

deal of interest has been aroused in Mexico concerning the native Pre-Columbian cultures which were destroyed and largely forgotten after the Spanish conquest. In recent years excavations have been carried out at the sites of Monte Alban and Mitla to reconstruct the Zapotec culture. In addition much restoration has been carried out at Monte Alban. Much other archeological work is now underway in the valley of Oaxaca. Tourists to the Oaxaca district invariably visit these ruins, where they are plagued with a horde of Indians offering "genuine artifacts" (made last week by some enterprising Zapotec following in the footsteps of his skilled forefathers) or occasionally true relics which must be sold surreptitiously owing to the government ban on the sale of Indian relics which are declared the property of the government. Needless to say this decree has not stopped the Indians from pursuing their lucrative business.

Due to the aforementioned isolation of this region, Oaxaca has remained the most purely Indian state in Mexico. Not only is the population almost purely Indian but the Indian languages, especially Zapotec, are still in common use, very often in preference to Spanish. Only in such spots as Oaxaca City where the Spanish conquerors settled in strength was the native culture seriously challenged. In the city of Oaxaca and in some of the nearby villages Spanish is now the dominant language, but in the rest of the vicinity the Indians speak Spanish only with a Zapotec accent.

The Mexican Revolution had a strong effect on the Valley of Oaxaca. The old haciendas were broken up and the land redistributed to the Indians in ejidos, a communal village ownership of the land. The ejidos generally run from the valley bottoms up into the surrounding mountains, giving each village a share of land of all qualities. Most of the bottomlands are planted in corn, the Indian staple throughout Mexico. There are also many maguey plants plus some small sugar cane fields, alfalfa, and some castor bean trees. Some of the lower slopes are used or have been used in a shifting agriculture for the cultivation of corn also. Most of these slopes however, are used as pasture for goats. The upper slopes are largely forested, with a low, scrubby mixed cover containint a few scattered cultivated fields. The thinness of the hill soil and the availability of good bottomland may discourage the cultivation of more hill slopes. For this reason the Valley of Oaxaca seems to have little of the severe soil erosion problem prevalent elsewhere in Highland Mexico, especially in the Mixteca Alta to the northwest.

The Indians are basically self-sufficient, with the prime exception of the numerous markets which are held in different towns on different days of the week. These fairs often seem primarily a social function but increasingly they tend to bring the Indian into contact with the products of the world and thus to lessen his self-sufficiency. Everything is for sale at these markets from a length of sugar cane (the local sweet) to sandals made out of pieces of old tires. Among the more interesting of the local industries is the production of mescal, a liquor made from the maguey cactus.

The Zapotecs were never crushed or lost their self respect

as a group. This is possibly even more true of the lowland Zapotecs of the southern part of the Isthmus of Tehuantepec. As a result the Zapotecs are freer, prouder, more enterprising and lively than most of the Mexican Indians. They do not have the timidity and inborn distrust of the white man of the long-suffering Mexican Indian. They are proud of their race and culture and by concerted effort and mass resistance have always maintained their national integrity. They have contributed many great men to the Mexican nation including Benito Juarez, considered by many Mexicans their outstanding national hero. Even today the Indian villages, particularly in the more remote districts remain basically free of government control. Occasionally when bloody feuds break out the government attempts to step in, but usually only with a limited degree of success. Local law or custom still prevails in such districts, and so the Zapotecs live on in their mountain fastnesses, proudly continuing their old way of life and asking only to be left alone.

DEAD LETTERS

The newsletters sent to the following members were returned to the Editorial Office by the Post Office. Can you help us locate any of these people?

Ruth E. Baugh
Wade Currier
Eleanor Fass
Mercedes Fermin
Ann Ruth J. Houston
Stanley Mackun
Margaret Quimby

IN MEMORIAM

The Clark University Geographical Society notes with regret the passing of Dr. Homer Leroy Shantz last June at the age of 82. Dr. Shantz earned his PH. D. in botany at the University of Nebraska in 1905 and his early work was concerned with grasses and other vegetation of the Great Plains. His long professional career embraced college teaching including a term from 1922 to 1926 as Lecturer in Plant Geography at Clark, eight years as President of the University of Arizona, and two long periods of service with the United States Department of Agriculture. Through all these posts he remained a productive research scholar whose written works and maps, even those published thirty years ago, remain classic references in the fields of botany and plant geography. Dr. Shantz made three research trips to Africa in the early part of this century, and in 1956, at the age of 80, returned to Africa under an ONR grant to restudy its vegetation and make a photographic comparison of the present plant life with that of 1919-20.

In many ways Dr. Shantz was ahead of the time (e.g., his 1927 quantitative studies of evapotranspiration, or his pioneering work in arid lands research). His lifelong devotion to significant research, his brilliant career as teacher and administrator, and his enterprise at an age when most men are content to remain by the fireside are a standard of scholarship to which all students may aspire, and few will attain.

CHENA CULTIVATION IN CEYLON

Simon Baker

In its lower reaches, the Walawe Ganga flows through an area of less than 75 inches average annual rainfall. This is, in fact, a portion of the great dry zone of Ceylon. By the standards of northeastern U.S.A., an average annual precipitation of between 50 and 75 inches is considered more than ample to carry on a seasonal stable agriculture. In a tropical area, with average annual temperatures ranging between 75°F and 81°F, and a strong seasonality of rainfall, the 75 inches of rain does not suffice to support year-round or even stable seasonal agricultural activities. The bulk of the moisture in this area is provided during the northeast monsoon period between November and February. Some convectional rain may also fall in the months of September and October. The runoff from these rains is stored in the many small tanks (reservoirs) which dot this area, and is then later released to irrigate the paddy fields lying below the earthen tank bunds (dams). Elsewhere in this portion of southern Ceylon, as in other parts of the dry zone, these rains are depended on to support a system of shifting agriculture known locally as chena.

The practice of chena cultivation is reputed to be ancient; certainly the methods and tools employed are very simple and such simplicity is often associated with antiquity. This type of cultivation is an adjustment to strong seasonality of precipitation and is most successfully carried on in an area of very low population density or of vast expanses of forest.

The chief tools of cultivation are fire, the axe, and a hoe-like implement called the mamoty. Toward the end of the dry season, portions of the dry mixed evergreen forest are selected for future chenas and most of the trees therein are felled. These lie on the ground for several months drying out under the hot sun and dessicating winds. Just before the onset of the seasonal rains, all this tangle of fallen trees is set afire. The burning not only reduces the trees and other vegetation to ash but also serves to clear the soil surface of smaller plants which would compete with the young crop. This method is very wasteful of organic matter, but it does provide a great deal of mineral matter in a form which can be rapidly utilized by the coming crop.

The various crops of small grains and vegetables are sown broadcast together either just before or right at the onset of the rains in September or October. Local conditions and preferences determine which of the following crops may be found on any given chena in this area:

Grains:
- Kurrakan - Eleusine coracana
- Meneri - Panicum spp.
- Maize - Zea Mays

Oil Seed:
- Gingelly - Sesamum indicum (sesame seed)

Fiber:
- Cotton - Gossypium spp.

Vegetables:
- Pumpkin - Cucurbita maxima
- Ash pumpkin - Benicosa cerifera
- Loofah - Luffa aegyptiaca

Vegetables (cont.)

Cucumbers - Cucumis sativus var
Brinjal - Solanum Melongena (Eggplant)
Lady's fingers - Hibiscus esculentus (Okra)
Chillies - Capsicum spp. (Hot peppers)
Gram - Phaseolus Mungo (Mung bean)

A light working of the soil surface with the mamoty provides the seedbed. Growth is rapid and most of the crops are short-lived, making the most of the brief rainy period. At the same time the crops are growing they are accompanied by a new growth of grasses, shrubs and tree seedlings. In most cases, this weed growth plus the impoverishment of the soil, due to the rapid leaching of the minerals liberated by burning, and the destruction of organic matter by fire, are enough to prevent a second year of successful cropping. If the cultivator is lucky, he may get two years' crops from his chena, but usually he must move elsewhere to cut and burn a fresh chena each year. He may not return to the same spot to plant again from anywhere between four to fifteen years, depending on population pressure in the area.

The family depending on chena for a subsistence livelihood faces many hazzards and difficulties. The rains do not always come at the time they are expected, nor is the quantity always sufficient to produce good crops. At times like this, the lot of the cultivator is one of misery and near starvation. In addition, he must contend with the ravages of wild boar, deer, and elephants which can destroy his labor of months in a single night. While the crop is growing the cultivator or a member of his family must stand watch every night, in the shelter of a flimsily constructed hut, to drive off the wild animals. Once the crop is successfully harvested the cultivator tries to sell his surplus, but the trouble is that all the cultivators in nearby chenas also have their surpluses to dispose of at exactly the same time. This situation puts them all at the mercy of the produce buyers from the large population centers, who come into the dry zone to buy vegetables. The cultivator, therefore, does not get much return for his labors and finds himself in constant debt to local small shop keepers from whom he must buy such items as cloth, rice, and kerosene.

It is no wonder then, that still another type of chena activity exists in this area and in other parts of the dry zone. It is devoted to the illicit cultivation of ganja (Cannabis sativa), a narcotic which is smoked in Ceylon and India. Growing of this plant is prohibited, hence it has become very profitable to produce. It is usually grown in pure stands on small chenas a fraction of an acre in extent. These chenas are usually located in inaccessible areas and are very difficult to find on the ground but easily spotted from the air. As a result, there is a constant struggle between the police and army on the one hand and some chena cultivators and gangsters on the other. In doing field work among chena cultivators, one sometimes finds a certain reluctance to answer questions, and it is not wise to wander too far off the beaten path.

In conclusion, it should be stated that chena cultivation is almost universally recognized in Ceylon as being a wasteful and unsatisfactory use of the dry zone lands and forests. Certain control measures, such as the issueing of permits for chena cultivation on Crown Lands, are in effect. This only serves to slow down the degredation of the land, but it solves nothing. The rapidly increasing population of Ceylon requires that the water resources in the dry zone be fully developed so that all potentially irrigated lands be put into use. The bulk of the dry zone will never be irrigated because of lack of water and topographic considerations. These are the lands which will be chenaed unless a more permanent type of agriculture can be devised for them. Research toward this end is now in progress, but it must be intensified to meet the challenge of the growing population.

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1958-59 CUGS Officers

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Agnes Zetterman	Social Chairman
Fiske Rawden	Editor Monadnock
Albert Mitchell	Business Manager

WEDDING BELLS

We extend our heartiest congratulations to Lester Unterberg and Jean McGee on their wedding on December 21, 1958.

Workroom Committees

Arthur Lord	Chmn. Workroom Com.
Sumitra Benoit	Workroom Com.
Robert Black	Workroom Com.
Harry Neal	Special Proj. Com.
Robert Condon	Darkroom Com.
Richard Reseska	Darkroom Com.

FIELD CAMP REPORT

No fall semester at Clark is complete without its annual field camp and this year was no exception. After a week's instruction at home base, the members departed, but not without a delay. The camp was not ready to receive us on the scheduled opening day, so we had an extra day's grace and soft beds. This was both appreciated and short-lived. So, on a beautiful sunny Friday morning we set out for the camp.

The camp site for this year was Camp Delaware, a non-sectarian camp for under-privileged children (and, I think, geographers), in the Triassic Lowland of New Jersey. It is within easy commuting distance of Princeton and Trenton. One can see that this is well outside the usual area covered by Clark field camp parties and the area had the novelty of being both new and somewhat confusing to those of us who are used to working in glaciated areas. However, Dr. Lougee had a field day conducting original research in the Jerseyan glacial drift near the area and inspecting the Pennsauken gravels of New Jersey.

The Camp period was divided into two one-week periods. During the first week, we went on a few locational field trips in the area. Then Dr. Murphy led the studies of mapping the city of Trenton's C.B.D. Anyone who has used the Murphy method is familiar with how accurate the results are and with how loud the City Fathers can complain when confronted with an unbiased account of their fair community. The councilors of Trenton were both proficient and prolific in this last talent. Dr. Murphy merely commented after he had delivered the results, "Well, they did yell a little." During the latter half of the first week, Dr. Murphy also guided us in urban expansion studies of Trenton as a part of Jean Gottmann's Megalopolis study. We were highly honored to have Gottmann as our guest one evening and he explained his philosophy and the practice of his studies.

The second week was given over to agricultural land-use studies. Dr. Hans Carol, an agricultural specialist from the University of Zurich, conducted the work. We were instructed in the methods of field mapping, crop and animal identification (one of the members had never seen a pig before) and farm interview techniques. The last mentioned item includes the gentle art of trying to persuade the farmer that you're really not a tax assessor after all, trying to shut him up once he does start talking, and attempting to determine how much of the information he gives you is reliable. None of these are part of the formal instruction, but are learned in the school of hard knocks and comparing experiences with those who have done this sort of work before. Dr. Carol also gave us detailed instruction in the methods of soil classification, and evaluation.

Dr. Warman was again on hand to disturb our sleep at 4:00 a.m. and send us forth into the night to swing the thermometers. The night was cold, clear, and black, as were our thoughts. One of the members made the best of the situation and replied to an inquisitive passerby that he was taking a radiation count. So far we haven't heard of any scare or mass exodus from Trenton, but the situation does call James Thurber's "The Day the Dam Broke" to mind.

The week following field camp is perhaps one of the most hectic ones of the entire school year. The field work was now assembled, placed in some semblance of logical order and a Field Camp Report was drawn from the material. Some of the members did not get to bed until 2:00 a.m. on the day before they were due and most of us looked forward to "taking it easy in the regular grind."

Unfortunately, the camp was too far afield for us to have many visitors. Dr. Jean Gottmann and a few Clark grads in the area were able to come out, but generally we had the camp to ourselves. Naturally, the camp was a time when the members came to know each other and by the time it was over we had become fast friends.

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STAFF NEWS

Dr. Samuel Van Valkenburg ended a busy year last June and began an equally busy one teaching during the summer school at Clark. Dr. and Mrs. Van then went to the A.A.G. meetings in Los Angeles. On the way back to Worcester, he stopped off at Lansing, Michigan where he spoke for Michigan State University for the Social Science Institute. In October, he was in Maryland to speak for the Maryland State Teachers Association and also at Morgan State Teachers College in Baltimore. In January he will speak at Wayne State University in Detroit and will address the Clark Alumni in that city. He also plans to speak at the State Teachers College in Edinboro, Pennsylvania at that time and later on will present a paper at the N.C.G.E. meetings on the Common Market.

As if this were not enough to keep him busy, Dr. Van plans on spending the next summer in Europe conducting field work. In between all these activities, he and Dr. Warman are continuing their work on a high school geography textbook.

Dr. Raymond E. Murphy returned from the University of California where he was Visiting Professor for the second semester of the 1957-58 year. Dr. Murphy also conducted some urban field work during the last summer. At present he is editing Economic Geography and working on an urban geography textbook. He has completed an article, "The Industrial Sites Inventory: An Example of Applied Geography" to appear in a Festschrift being published at Goteborg, Sweden. Dr. Murphy will present a paper before the Highway Research Board in Washington, D.C. in early January entitled, "The Central Business District and Its Implications in Highway Planning." At present, he is continuing work on an urban geography textbook.

Dr. Richard J. Lougee covered this summer, 14,000 miles in 32 states and 5 Canadian provinces, in company with his son Gerry and a friend, Dr. Sigurd Hansen, of the Geological Survey of Denmark. The purpose of this trip was to inspect various problems of glacial

history, particularly that of a possible submergence of the prairie states in the region of so-called older glaciations. The similarity of these problems to those in the periphery of Scandinavia was of particular interest to Dr. Hansen who was making his first visit to America. If changes are made in North American glacial history, similar revisions may follow in Europe. A reduction in the number of glacial stages in the Ice Age, possibly to one only, is the present trend of thinking. This also was the subject of a conference held at Clark in October to which Dr. Richard Russell flew in to contribute his wide knowledge of lower Mississippi Valley history. Members of the conference took time off to enjoy a tea in the Libbey Library and a short field trip to see the 610-foot marine limit delta in Auburn.

Dr. Henry J. Warman taught a course, "Geography in Education" this summer, and worked on the manuscript and exercises for a high school textbook in geography. Dr. Warman also has a very crowded schedule. During the summer, he was travelling through the eastern states searching for future field camp sites. At the moment, he is engaged in research on the Clark Central African studies. He is serving as Chairman of the Planning Committee of the National Countil, besides serving as President of Gamma Theta Upsilon, and consultant for local schools. In November Dr. Warman spoke for the N.C.G.E. in New York, At present he is planning for a field season in eastern South America and also for a human and cultural textbook.

Mr. Guy H. Burnham corralled enough students last summer to split his cartography course into two classes. At the present time he is continuing the series of lectures which turn young neophytes into accomplished map makers. During the past three years, Mr. Burnham has been supervising a group of students in constructing the maps for Edward Higbee's new textbook, "American Agriculture." This autumn, the results of that work were seen with the publication of the book. Mr. Burnham is justifiably pleased with the results, as is Dr. Higbee. Next summer, Mr. Burnham plans to teach cartography.

Dr. Hans H. Carol is Visiting Professor from the University of Zurich, Switzerland. He is teaching the land use course at Clark and will offer a regional course on Africa during the spring. Last winter he returned to Africa and conducted field studies in Western Africa. Dr. Carol has travelled widely in Africa on several different occasions. At present, he is "getting familiar" with the United States and teaching." Later, he plans to travel through the southern and western states.

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This year all the staff at Clark is back on hand to guide the students, but most of the old hands have moved out and a whole new crop of students are here to fill their places. Naturally, the old guard is having a lot of fun filling the new members in on the details as to what is expected of them, but now that the Van-Koeppen Monster is out and running, and we have seen what he really is, some of the initial terror is gone and most of us have settled down to hard, earnest study to keep that creature and others at bay.

Our representative from Pakistan is ALTAF AHMAD (M.A. 1942, Muslim University, Aligarh). Mr. Ahmad's major interests are in Human and Cultural. He spent last summer teaching and plans to return to Pakistan to continue teaching after his Ph.D. Mr. Ahmad's home town is Karachi in West Pakistan.

SUMITRA BENOIT comes to us from Lucknow, Uttar Pradesh, India. Sumitra received her M.A. from the University of Allahabad in 1952, and L.T. in 1954. She is one of the new Ph.D. residence members with a major interest in Human and Cultural and a newly found interest in Climatology. On her way to the States, Sumitra had a month-long trip throughout the Mediterranean and managed to see some of the northern states in this country.

ROBERT BLACK (B.S.Ed., Boston College, 1958) is interested in hydrology. Bob and his brand new wife comes from Wakefield, Mass. Last summer he worked for the Post Office, so that means he is currently working in the Salt Mines.

DAVID BRODEUR (B.A. Govt., Harvard, 1955) managed to get his cartography requirement out of the way this past summer. He is interested in political and economic geography and plans to teach on the college level in the future. Dave has had some past experience in teaching and has put some time in as an advertising man, otherwise known as a huckster to the cognoscenti.

JOHN (otherwise known as TAIT) DAVIS (M.A. George Washington University, 1958) is from Agincourt, Ontario. Tait's major interest in geography is in economic and urban. He spent a non-geographical summer this year selling furniture.

ALETA GRILLOT (B.A. Western Reserve University, 1958) is from Tiffin, Ohio. At the moment, Leta is mainly concerned with getting her Master's. She spent last summer as a counselor at the Girl Scout Day and Stay Camp. By all accounts, this must have been quite an event not only for Leta, but for her charges as well.

JOSEPH HICKEY (M.A. Clark University, 1958) has returned to Clark for his Ph.D. He completed his residence year last year and is currently boning up on Spanish and German before he starts his dissertation. Joe is one of our well travelled members, having had the advantages of an Army education with a long tour of duty in Germany as well as a tour in the Canadian wilds. Last summer Joe undertook extensive travel and research in

Mexico. At present he is engaged in research on the Clark Central African studies.

ROBERT HUHTANEN (B.S.Ed., Bridgewater State Teachers College, 1958) hails from Weymouth, Mass. Bob is a physiography and economics man, but has no plans as to what he wants to do after he leaves Clark. He spent last summer staying cool in the cart lab.

LILLIAN KENT (B.S. Ed. Fitchburg Teachers College, 1957) is from Leominster, Mass. Lillian's major field of interest is in historical and political geography and she plans to return to teaching or engage in research work if the opportunity presents itself. She spent the summer in Iowa and out on Cape Cod.

WILLIAM KOELSCH (Sc.B., Bucknell University, 1955) is back again with us this year. Bill is our historian and philosopher and was editor of the Monadnock last year. This year it is rather hard to tell just what Bill is doing, but as the most quoted authority on many subjects, we can be sure that his time is being well spent. Last summer, Bill was laid out with illness and after regaining his health in various watering places, Bill has tentatively selected "The Geography of Convalescence in the Northeastern Seaboard" as his thesis subject.

RICHARD KOPEC (M.Ed. Penn State University, 1955) is another of the few old hands left over from last year. At the moment he is busy with German and preparing to teach at the Rhode Island College of Education.

ROBERT LOOKER (B.S. Ed.State Teachers College, Salem, Mass., 1956) is from Lynn, Mass. Bob, who is interested in physiography, has just completed his sojurn in the Army and spent last summer readjusting to civilian life.

ARTHUR LORD (M.A. Clark University, 1959 he hopes) is back again for his residence year for the Ph.D. Last summer Arthur completed the field work for his thesis, "The Late-Glacial Water Levels of Southeastern Massachusetts." The thesis consists of a study of the late-glacial water levels in southeastern Massachusetts in a series of valleys from New Bedford north to Weymouth. The object of the thesis is to establish the position and distribution of the more important late-glacial water plains to measure their angle of tilt accurately, and to relate these plains to other water plains in New England. It is also hoped to establish where the glacial margin stood when the land movement occurred.

AGRIPPINA MACEWICZ (M.A. Clark University 1945) has returned to Clark for her Ph.D. Aggie plans on teaching at the college level after graduation.

ROBERT CONDON (M.A. pending, George Washington University) is a native of Seattle, in his Ph.D. residence year. Bob's thesis is a "Method of Measuring Industrial Diversification in the Manufacturing Industries." He is interested in mountain climbing and kept in shape last summer running an elevator in the U.S. Senate Building.

LANE JOHNSON is back with us again this year. Lane is working on his dissertation concerning the independent function of the satellite communities of the Boston area.

ROBERT LINGNER (M.A. U. of Maine 1956) has nearly completed his Ph.D. at present. He is an instructor in geology and has a class in the Evening College. As if this isn't enough to keep him busy, Bob is also organist in a local church.

SISTER MARION (M.Ed., Boston College 1938) is one of our well travelled members. Sister, who is in her Ph.D. residence year, has had a grand tour of Europe and has crossed the country probably more than any of us. Last summer she was in Nova Scotia, taught in Danville, Pa., and did some graduate work at Boston University. Sister Marion is the author of several geography textbooks for grade school and plans to continue teaching after graduation.

ALBERT MITCHELL (B.S. 1954 Farmington Teachers College) is on hand again in his Ph.D. residence year, having completed his M.A. at Clark last year. At present he is working on his thesis, and when all of his degrees are complated, Al plans to continue teaching.

JOHN MOULTON (M.A. University of Nebraska, 1930) is from Hastings, Nebraska. John, otherwise known as "Doc", spent the summer at the Michigan College of Mining and Technology in the U.P. After completing his residence at Clark he is going on to the Woods Hole Biological Station and when that is over he plans to retire into teaching again. This is a very busy schedule, but Doc is a physiographer primarily and he finds the experience invaluable.

HARRY NEAL (B.A. University of Texas 1953 and B.F.T. American Institute for Foreign Trade, Southern Methodist 1956) is from the second largest state in the Union. Harry's boots and cowboy shirts are a familiar sight by now, but so far he has not won any new converts to the Lone Star State.

RICHARD PRESTON (M.A. University of Washington 1957) is back to complete his Ph.D. after a summer of working for the Pittsburgh Regional Industrial Development Corporation. Rich plans on teaching economic and urban, with emphasis on Latin America.

REED STEWART (B.A. Philosophy, Amherst 1950) has had perhaps the most unusual teaching experience among any of us. Reed comes to us after a stint of teaching in Nigeria in an Episcopalian missionary school. His major interests are in tropical climates and land use, naturally, and Reed hopes to return to Africa someday.

FISKE RAWDEN (B.A. Wayne State University, 1958) is from the Automobile City. He is perhaps our most travelled member, having lived in Melbourne, Australia for two and a half years, and travelled through the Far East. He plans to write his thesis on the rice developments in northern Australia, but has no definite plans after graduation.

RICHARD RESESKA (B.A. Niagara University 1955) has just completed his Army service. Rocky is in his first year of M.A. work and is undecided as to his plans when he leaves Clark.

JOHN RICKERT (M.A. Rutgers, 1958) comes from Cedar Grove,New

Jersey. John's major interest in geography is in the urban and settlement field. He had the invaluable experience of being an assistant to Dr. Jean Gottmann last summer on Gottmann's Megalopolis study. John plans to return to teaching after he receives his Ph.D.

I. MADE SANDY (B.I. 1954, Bandung Teachers College) is currently working on his thesis and taking his Ph.D. residence. Sandy's major interests are in hydrology, teaching in Indonesia, his home and sometimes, darts.

LESTER UNTERBERG (B.A. Hunter College 1958) is the tallest man alive, or so we think. Les, who is only six feet, seven inches tall has earned the nickname of Cheyenne (from the tall hero of the T.V. program of the same name). His major interests are in economic geography and he plans to teach after leaving Clark.

AYLWARD WALNUT (M.A. George Washington University 1956) is from Barnegat Light, New Jersey. Woodie is interested in history and planning geography. He spent last summer as a ranger in the State Park at Barnegat Lighthouse.

KANIZ YUSUF (M.A. Punjab University, Lahore 1947) is again with us working on her dissertation. She plans to return to Pakistan and continue teaching.

AGNES ZETTERMAN (B.S. Carroll College 1958) comes from the Windy City. She worked for the county government in Chicago last summer and plans to teach upon graduation. Aggie was able to use her summer job to gather material for her thesis on "Some Aspects of the Location of Brass Knuckles in the Chicago Area." Needless to say, we are all eager to see the results of this study, and we all have a new found admiration and apprehension for Aggie.

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Remember, when moving to a new location, send us your old and new addresses.