

DR. SUKUMARAN NAIR

Dr. Nair is Land Development Officer for Travancore-Cochin State in India. Travancore-Cochin is the southern most part of India. Dr. Nair is 37 years old and is a very capable and intense young man who obtained his PhD from Ohio State University in 1949 in agronomy.

Dr. Nair makes a suggestion in regard to the study of Department of Agriculture activities in Washington. (See p. 2) This might prove inconvenient for U.S.D.A. personnel involved but it would certainly be meaningful for the individual trainee. He also feels the value of working directly in a county with a county agent is immeasurable and wishes there had been more of that type of training. Participation is mentioned on page 6 of the interview. The fact that lack of opportunity for participation is mentioned so frequently in these interviews indicates what an important factor it is.

Dr. Nair's interview is also a very positive one and especially interesting are his initial comments and his evaluation of Missouri and the seminar in the cultural approach to extension work.

EVALUATION INTERVIEW WITH DR. SURESHAN NAIR  
LAND DEVELOPMENT OFFICER  
TRAVANCORE-COCHIN STATE, INDIA

Q. When you arrived in the United States what were your personal objectives for this study trip?

A. I had previously had about three years training in this country as a student at Ohio State University. During that period I was attached to the SOS station of the USDA at Coshocton, Ohio for a period of nearly six months. I then had the opportunity of studying in great detail almost all the activities of the SOS and my being connected with the agricultural extension service of Ohio State gave me a still better chance for getting some first hand knowledge of extension activities in that state. This, therefore, is more or less like a refresher course to me on what I had already had from this country. The government of Travancore-Cochin contemplates on starting two community development projects and one project sponsored by the Ford Foundation. These projects are intended to bring to the minds of the actual sons of the soil the scientific principles of agriculture evolved at the experiment stations in India and abroad. Agricultural extension being entirely new in the state they thought it worthwhile to get one of their men fully trained for the work and through the cooperation of the Government of India and the Ford Foundation I am now in this country to study in still greater detail extension principles. By extension principles I mean the organization and working of the agricultural extension service in this country; how it is linked with the Federal Department of Agriculture, and the research stations; how the results of research are actually being translated to the farmers; what part the county agent plays in the same; and how the whole thing is tested out by the farmer and the farmer's reactions to the same. And how we can modify these to our conditions. These are my objectives.

Q. What are some of the problems you have in extension work in your state?

A. The major food crop in my state is rice. It is grown in irrigated lands and the average size of the holdings is rather too small. That combined with the fragmentation of holdings makes it really difficult for the adoption of any organized system of farming. The next important crop is tapioca which is a root and a row crop. This is generally grown in sloping areas and therefore causes heavy soil erosion. Attempts have just been started to control soil erosion in the state. Lack of finance on the part of the cultivator holds him back from following the suggestions given by the officers concerned. Cooperative efforts may prove successful. The three projects now being contemplated by the government aims at bringing together several 100,000 acres of land into one unit and to work it up as a single farm. On the other hand it aims at cooperative farming. These schemes are being financed partly by the Government of India under the Point IV program and one scheme is financed totally by the Ford Foundation. It is hoped that in the areas so selected all the principles of improved and scientific agriculture will be adopted on organized and systematic lines to the betterment of our agriculture. Prevention of soil erosion, provision of minor irrigation facilities, providing better transport facilities by way of village roads, improvement of education, hospital facilities and all other measures necessary for the people of that community form the major items of work under these schemes. To implement all this a hearty cooperation from the owners of land is extremely essential and to get that cooperation we need the extension service. Training of personnel will be the first item of work after my return to my state. I believe that it is not the academic qualifications of the staff appointed for the purpose that is so essential as the sympathy and understanding with which the concerned staff make their approach to the actual farmers. Now this training is to be given to the selected staff for the purpose has been one of my careful observations during my stay here so far. The results of research on scientific agriculture evolved at our experiment station and at similar stations in the rest of

India to be made available to farmers is a great problem. The farmers can be sold into any practice only if they are made to understand that the suggested practices will yield higher money returns. For this purpose, method demonstrations or test demonstrations farms will have to be started. The farms already in existence in the state could be remodeled accordingly. In these farms better use of manures, better varieties of seed, etc., could be stocked and supplied to the farmers in that community. By keeping accurate records of the operations in the farm and by making them available to the farmers of the area will go a long way in the quick adoption of agricultural extension principles. These farms will give the necessary education to those farmers who are already not aware of such improved principles. The farmers as a class in my state are well up in agriculture and as in any other parts of the world, they are brisk in bringing into practice methods which bring in profitable returns. The high percentage of literacy in my state explains the same. Sixty-eight percent of the people are literate.

Q. What was the value to you of the study in Washington D. C.?

A. One week's stay in Washington with a really crowded program gave us just a birdseye view of the agriculture in America. It gave us a chance to come in contact with the leading personalities connected with agricultural development in this country and how they make their approach to the problems before them and how well they analyze each such problem and as to how they help the farmers solve their individual problems. It was more a week of orientation and the most interesting programs to me were the ones sponsored by Mr. Wilson and Mr. Kenneth Warner. Their talks gave me an insight into their modes of approaching the people and how sympathetically they view the actual farmer. The different sections of the USDA where we had an occasion to visit showed us the working of the Department and how the coordinated working of the research, extension, and administration help in solving the farmers difficulties. My motive for observation was how the different sections and people work together for the benefit of the farmer. (Did you pick up any ideas that you might be able to use directly or indirectly?) Yes. The way in which the people working in various departments moved freely with each other and their exchange of opinions is a good example of how quickly matters could be decided in any government. This is one of the striking facts that I saw in the administration in the USDA. Again the method of teaching and representation of facts to the people, the farmers, was very striking. Visual aids form a major part in such education. I think these are the two things.

Q. Do you have any suggestions for ways the study in Washington could have been improved?

A. The time allotted to us in each section of the extension service was very short. We never had an occasion even to frankly and honestly converse with the several sections in the USDA. As for myself I highly desired to meet some personalities in the SCS but for lack of time I had to skip it. Similarly, I was deeply interested in getting detailed information about the methods of training of personnel, etc., from Mr. Kenneth Warner which also I didn't have the occasion to do. As such, I strongly suggest that the objectives and the desires of the incoming foreigner may first be ascertained and at least one day should be left open to him for getting the information that he might especially need.

Q. What was the value to you of the study in Tennessee?

A. The TVA gave me an impression as to how a local self government body can do a lot of good for the people of that community. That's perhaps the most important thing that the TVA has shown. The program in Tennessee was well organized. The visits to the several counties in the state were of special interest especially in giving

us a chance to hear from the farmers themselves as to how far extension had helped them. The county agents and the home agents were seen more as members of the respective farm families than as officials of government. (Did you pick up any ideas that might be of use to you?) A well laid farm program not only improves the economic status of the farmer, but also enhances the opportunities for industrial development. This was shown by the TVA in their development of hydro-electric power from the waters of the Tennessee River and its tributaries. Prevention of soil erosion was perhaps their major motive and it culminated in industrial development. Possibilities for such development are many and varied in my state. With adequate finance similar TVA's could be started in my part of India also.

Q. Do you have any suggestions for ways the study in Tennessee could have been improved?

A. I felt it was a well laid out program. It was well planned in view of the short time we had there.

Q. What was the value to you of the study in Auburn, Alabama?

A. The two days in Auburn were spent profitably. One day in studying the fish culture, especially in small ponds reminded me of the various ponds, lakes and backwaters back in my native state and how disorganized the fishing is there. Fish culture in the ponds at Auburn gave me some insight as to how it could be modified to suit my conditions in India. We have in my home state several plans now to improve our fishing industry which is now more or less confined to deep sea and backwater fishing. Through the cooperation of the Japanese government we are contemplating on developing our fishing industry and the things I saw at Auburn will be of some material value to me in taking final decisions about the matter. The visual aid talks given to us by the extension people at the University were really interesting and lively. Professor King's explanation of using visual aids to show farmers the significance of studies was altogether new to me. I believe that I will on my return imitate a lot of his tactics to convince the farmers of my state the results of research. In the training that will be given to the trainees connected with the project works, application of visual aids will form part of their curriculum.

Q. Do you have any suggestions for ways the study at Auburn could have been improved?

A. It was a very short time so I think the program was all right.

Q. What was the value to you of the study at Tuskegee, Alabama?

A. Tuskegee is a typical example of what a needy people in any country can do on their own if they have a will for it. "Where there's a will, there's a way" That was proved by the Negro people at Tuskegee. The housing project schemes sponsored by those people there is of special interest. Many of the mud homes belonging to the poor average farmer in my state could be remodeled taking Tuskegee as an example. Despite the various handicaps and difficulties encountered by the Negroes of that community their work at the Institute is highly creditable. Tom Campbell was a veteran of extension and was a typical extension leader. (Did you pick up any ideas there that may be of use to you in your own work?) As I mentioned, the housing idea. Many of our people can build those type of self help houses.

Q. Do you have any suggestions for ways the study at Tuskegee could have been improved?

A. No. It was very good to have Tuskegee included in our program. The authorities deserve congratulations on that.

Q. What was the value to you of the study in Missouri?

A. The experience at Sanford Farm and the talk by Dr. Albrect was very interesting. The different experiments carried out on that farm on soil relations to plant growth were unique. His explanation of the importance of proteins in human nutrition and how well it can be fitted up into the farming program in any part of the world was striking. The results of his studies on soil structure, soil moisture and soil air were of great importance in understanding how depleted soils could be improved by application of manures and by modifying cultural practices. During the one week's stay at Columbia I had the experience of hearing a good lot about the balanced farming method followed in Missouri. This type of farming planned out after giving due consideration to the needs and conditions of agriculture in the state is only a very well planned system of soil and crop management. The balanced farms which we saw were all of interest, especially from the point of view of the particular type of farming followed in each farm. Mr. Caldwell's and Mr. Rebermeyer's explanations of the different modes of farming, the type of extension practices and the needs through which these extension practices were driven home to the farmers was particularly interesting. It appears to me that the method of approach made by these extension workers to the cultivators was the most important thing. The livestock program in the University Farm to see the adaptations of the animals to different temperatures was interesting. The practical needs of the farmer could very well be counteracted with such a program.

During the second week of our stay in Columbia I was deputized to Carthage County where Mr. V. A. Sapp was the county agent. The very first thing that impressed me at Carthage was the confidence put in the county agent by all the people, his feeling towards the farmers of his county, and the manner of his giving suggestions both to his subordinates and co-workers. He appeared to me as a typical extension worker, equipped with all the material for the same. The beef tour organized by him in that county the day after our visit there was instructive in the fact that the idea behind the tour was to get several farmers together to visit some of the beef cattle grown by different farmers and how well each farmer pays attention to his animals. The beef tour was well attended, too. The local radio and the press and a running commentary was given of the whole tour. During the one day's stay with Mr. and Mrs. John Ferris at their farm I had the chance to get a first hand information about their actual working of the farm and what part the county agent played in bringing their farming operations to a success. I also visited the Pet Milk Plant where all operations connected with the purchase and marketing of milk were involved. I also visited their big processing plant. The Marble Corporation of Carthage I also visited. They did not only a profitable business in the manufacture of marble slabs and other necessities of life, but also they utilized every bit of waste marble in manufacturing agricultural limestone. This limestone industry was a side business to them in the operation of the industry. I also visited the Tri-State Fertilizer Company run by Mr. Milo Johnson near Joplin. In addition I had the chance of visiting the National Biscuit Company and the stock yards at Joplin. Wherever I went I was received with great ovation, possibly because of the popularity and influence of the county agent in the locality. The county fair in Newton County was more or less a place where the farmers displayed all their agricultural exhibits. The county fair in my estimation gave the farmers an incentive to produce better items of agricultural produce and also to learn how best their practices could be modified to improve their produce and compete with the rest. (Did you pick up any ideas that might be of use to you in your own work?) The beef tour was particularly of some value because the idea behind the tour was to collect the farmers of the locality together and show them some real demonstrations of agricultural improvements. This idea could be easily followed in my state also in collecting the farmers together and taking them through different farms and explaining to them

what improvements could be done by each man in his farm. Secondly, that also gives a chance for the youngsters in the farm areas to get more interested in the farming operations done by the elders in the family and thereby raise an interest among the younger folks, creating competition for better production. The mechanization of labor seen in those farms could not possibly be adopted anywhere in my state, but still economy could be affected to a certain extent, especially in the storing of marketable produce, hay, etc. The cooperation given to the beef tour by the radio and the press was particularly of interest. That afforded a chance for the farmers listening also to participate in the tour. I believe I may request the cooperation of all such agencies in the tours or crop competitions that may be arranged in my state. Further, the behavior of the county agent to the farmers of his county gives an example of what a man can gain by courteous and good behavior. Things of that type have to be driven home into the minds of all the staff working directly with the farmers on the field.

Q. Do you have any suggestions for ways the study at Columbia and in Missouri could have been improved?

A. Of the stay in Columbia I believe that a greater period should have been set aside for working with the county agents and touring around with them. The nearly ten days we spent in Columbia was a little in excess of what was actually needed to understand what the University and the officials of the extension service were doing at the headquarters. Furthermore, it must be stated that we never had the chance within the ten days we stayed at Columbia of meeting the State Extension Director although his headquarters was Columbia.

Q. What was the value to you of the seminar in human relations and cultural anthropology conducted by Dr. Spicer in the New Mexico and Arizona area?

A. To me personally the week with Dr. Spicer in New Mexico was very instructive and enlightening. His first days analysis of the problem of anthropology was really admirable. That gave an insight into how any lay man could stop and think to understand the other man's problems and to evolve a solution for such problems. Cultural anthropology, although a difficult subject in itself was made easy to me by Dr. Spicer's illustrations on the subject. His explanation about the different cultures and how culture affects human progress was shown in different communities we visited. All these cultures according to him aimed at the betterment of their own selves in one way or another, in slow or rapid degrees. I really think that week was one of the most interesting weeks spent in this country. Mr. H. L. Wilson's participation in the seminar gave me particular interest just for the reason how an old and experienced brain could throw some more limelight into the actual situation. His experiences in agricultural extension, working with the different types of people in different parts of the country created more life into the discussions. His comments based on his own personal experiences were vivid and clear. His explanation in some of the obscure details of the culture of the Navaho community was particularly vital. A close resemblance between the sentiments of some of these communities as explained to us by the Extension Director and the cultures in our country existed. These cultures seemed so familiar to me often times, especially from the point of view of the sand paintings and the agricultural tools used by these Indian people. But for the presence of the USDA Extension Director, this week would not have been so very interesting as it really was. (Did you pick up any ideas that might be of use to you in your own work?) Yes. A cultural understanding of the people of any community is always essential in giving suggestions for improvement to that community. In my state some people have a peculiar liking towards adoption of improved methods of farming, whereas others do not have the same liking, whereas some others have to be induced, sometimes even by force to adopt better



farming practices. An understanding of these differences has now been made possible to me by an understanding of what part culture plays in one's life. Dr. Spicer's talks have given me an insight into that matter and I believe I will so modify my methods of propaganda and extension work among the different communities in my state to suit their culture. Another thing I could say is that any amount of talking within the four walls of a classroom will never be so effective as going out to the field and seeing things practically. Our tours to the Spanish American villages, to the Navaho, Pueblo and Hopi Indian villages gave me a clearer understanding of Dr. Spicer's explanation of anthropology. The different cultures of each of these communities were different in themselves. A general phenomenon observed by me was that the Spanish Americans were fast growing into the Anglo culture, whereas the Indians were still lagging behind. That is mainly because of the cultural differences in them. The seminar at the Grand Canyon wherein we all actively participated in the lively discussion was of great value in summing up our experiences with the different cultures in that state and how these different cultures affected the agricultural prosperity of each community.

- Q. Do you have any suggestions for ways this study could have been improved?
- A. In seminars of such a kind I would strongly suggest that each member of the party participating in the seminar should be asked to give a frank expression of his own experiences to the rest of the group followed by discussions on each man's reflections. Seminars should as far as possible be made more lively by discussions than by one or two folks alone talking. It would even be better if each man is asked to prepare a small paper on what he has seen. The value of group participation should not be underestimated all through a tour of study as we have had in the United States.
- Q. In summing up, looking back now over the whole tour, do you feel that this study trip has met the objectives you outlined in the beginning of this interview?
- A. The tour is nearing an end. Agricultural extension in the USA has practically attained the stage of excellence and I on my part believe that I have gained a fundamental knowledge on the broad principles of extension in this country. The purpose of my stay in this country could be justified only after my return home and by the fruits of my organization and adoption of extension principles to the farmers of my state. I believe that with the knowledge of agricultural extension that I have additionally gained from this trip I will be able to do a very good job of agricultural extension back in my own home state to gulf the differences between the scientist and the farmer. The new and modern principles of agriculture can be easily put through to the farmers by following a sound basis of agricultural extension. I am sure I have gained a great deal of knowledge in agricultural extension from this tour, in addition to what I had learned of agricultural extension nearly three and a half years ago from the Ohio State University. To sum up my remarks about this tour, I have to express my deep debt of gratitude to the Ford Foundation, the USDA and all the other cooperating agencies in having made a trip of this kind, unique in itself, possible. To feed India's nearly 360 millions is not an easy job. The food problem is perhaps the only major headache to us in India. If we can solve that problem by producing the deficit requirements of our country we will be happy and strong. This gesture on the part of the Ford Foundation in having taken us, a group of leaders in agriculture, one from each state in India, is perhaps the greatest humanitarian work that any organization or government can do to help another country build up her own resources. By the experience that we all have gained in the improved methods of agriculture and agricultural extension service principles from this country during this tour I hope that we will be able to build up our own country. Democracy does not give any government the unbridled right to compel her people to do any particular thing, but the responsibility of government lies

in leading and assisting her people to build up themselves. The American government, the USDA, and the Ford Foundation have now shown us the way as to how it is being done practically. It is now our duty to go back and do something for the good of our people. It is for the Government of India and the respective state governments to profitably utilize and to put us to the maximum responsibility possible to help our people to grow more food. I hope that within a few years from now, the guidance and the initiative shown to us by the people of America which we had the opportunity to see at the hands of the Ford Foundation, our country will have produced sufficient to feed our own people and thus make India wealthy, strong, and happy.



DR. B. T. NARAYANAN

Dr. Narayanan is Joint Director of Agriculture (Extension) in Mysore State. He has also worked as Deputy Director of Agriculture, Principal of an Agriculture College. In his present position he is in charge of crop extension programs and plant protection in the districts of his state and is assistant to the Director of Agriculture for administration of extension work in the districts. He received his under graduate education in chemistry in India and his PhD from the University of London. He is a highly trained and skilled agricultural technician. He is 51 years old.

Dr. Narayanan's interview is another positive one. He comments on the great value of county experience which gave an opportunity to observe the county agent in action ( See p. 5 and 6) and to live with a farm family. He felt that Missouri was the only visit which showed extension in practice rather than in theory. His comments on the seminar in the cultural approach to extension work are interesting.

His interview also illustrates, as do all the others, how much pride each of these Leaders from India have in the organization and accomplishments in Indian agriculture, both in research and in extension.

EVALUATION INTERVIEW WITH DR. B. T. NARAYANAN  
JOINT DIRECTOR OF AGRICULTURE (EXTENSION)  
MYSORE STATE, INDIA

Q. When you arrived in the United States what were your own personal objectives for this study trip?

A. I come from a state where 80% of the population depends directly upon the land and the rest have to be served by the land indirectly by supply of food material both for man and beast and the raw materials for some major and minor industries which supply human needs. The agriculture in the state is mainly of peasant farmers. That is to say, the average holding is small, about five to six acres for a family. Most of it is rain fed and subject to seasonal vagaries. The major problem now is how to produce enough on this sparse holding to feed and clothe not only themselves but supply to the 20% which have to be clothed and fed. Secondly, insufficient income to meet farm and other expenses is another problem. The income level of most of the agriculturists is low and credit facilities are not always easily available at the time when they are most wanted, such as the time for purchase of seed and manure, providing extra labor at harvest or sowing time, and such other incidental expenses on farm operations. Increased crop production and the methods adopted to do so, methods of soil and moisture conservation, credit facilities, and marketing agencies for a ready and assured market of the farmer's produce are some of the main subjects on which I want to study and in which I am particularly interested. Furthermore, the interrelationship and the integration of research and extension, the agencies that convey the results of research to the farmer, the methods they adopt, the procedure and practice, or other aspects of extension programs I also want to study.

Q. What are some of the problems you face in extension work in your state?

A. We have a set up like this in Mysore state. The Department of Agriculture has a system of extension work which has been established for 20 years called the Agricultural Demonstration and Propaganda Program. The results of work done on specific problems relating to the farmer in the research laboratories and tested out on governmental experiment stations are carried to the farmer's lands with the assistance of the farmer himself by means of plot trials or practice trials. These tests are known as demonstration plots, subvention plots, and subsidized plots. When seed multiplication of pedigree material is required seed nucleus and subsidized plots are also layed out on farmer's lands with the help and consent of the farmer himself. The research specialist is also the extension specialist on his own subject. That is to say, he is in direct touch with the experimental stations and plans and assists the translation of these results to the test demonstration plots on the farmers' lands in selected regions. He also assists in assaying the results of such tests and finalizing the release of information to the general public. The system of demonstration technique is as follows. When any test is completed on seed, use of fertilizers, plant protection methods, or cultural practices suited to the particular zone or soil climatic complex, certain farmers are selected in that group to test the results of these findings on their farms against the methods they are employing at that time or the seeds they are using. These farmers are preferably those who can place some land, time and interest at the disposal of the department for such testing. They are usually reimbursed for any extra cost in labor or material they may have to incur for such tests. The subvention plots, as these are called, are usually laid in a central spot, easily accessible to all farmers in that particular region in a central village, commonly known as circle headquarters, so that farmers who come for official business or for fairs can have access to these test plots. The demonstration plots are definitely those which have been thoroughly tested out in the region

as a result of earlier subvention trials. These are laid out in the different villages and form part of a general confirming test so that the farmer can convince himself of the value of the test. In this case the farmer is assisted with seed or manure or such other facilities that are necessary to lay out the demonstration. The results of such demonstrations and subventions form the basis of general recommendations in that particular zone.

The seed nucleus blocks are generally laid out on the fields of informed farmers with rigid controls of maintaining purity and quality. The farmer is usually paid a premium for these seed materials and the extra expenditure involved in maintaining his crop in condition is reimbursed wholly or to the major extent. During the last ten years an average of 4,000 demonstration plots, 500 subvention plots, and nearly a thousand seed plots of various plots have been laid out every year, but this should be conceded to be a very small number considering that nearly six point six million acres are actually under crop every year of which nearly four million acres are under food crops.

One of our problems is of extending these demonstrations to a greater number and in as many zones as possible and giving wider publicity by bringing together the farmers of a zone in their own zone and farmers in different zones interested in the same problems. Certain attempts have been made of recent years of holding field days in farmers' lands where the neighboring folk have gathered together and discussed agricultural problems of their zone and agricultural economic problems of the state as a whole. Annually farmers from all parts of the state are also gathered at one of the experimental stations for a visual education course extending over a fortnight when subject specialists and administrators and others address these farmers and the farmers go through the work on the farms and in the laboratories and have discussions. They also visit farms and associated industries in these areas. Attempts are made by the district agricultural staff to keep in touch with these farmers when they go back to their districts and make them the nucleus for testing out any new methods of practice. My problem is, how to strengthen this set up, how to strengthen the staff so that more farmers can be contacted, a greater number of demonstrations can be carried through, and the farmers themselves disseminate the knowledge. There is at present an experimental and agricultural union composed mainly of farmers and officials of the department of agriculture. The membership is open to non farmers interested in agriculture. The union has its offices at state, district, and taluk (county) levels and in some cases even at the circle (group of villages) level. These committees are mainly composed of elected members who are again principally farmers. The official block is represented on these committees by the local agricultural officer acting as secretary up to the district level. The central committee has the director of agriculture as the president and the animal husbandry, horticulture and the agricultural college being represented as members of the committee. The central committee is also mainly a farmers committee in that the district representative is usually a farmer elected by the district committee. This union has membership of about 3,000 all over the state and publishes a popular journal of agricultural interest both in English and in the local vernacular (Kannada). The journal is available for general distribution on payment of a nominal price. The department also publishes from time to time bulletins and hand bills in popular form and scientific publications for technical purposes. For several years an annual agricultural callendar is under publication. Our problems lie in extending these activities and financing these activities. The Department of Agriculture in Mysore consists of the Director of Agriculture who is also the Director of Agricultural Research and is in entire charge of the administrative duties of research, experimentation and extension. He is assisted by a Director of extension and research whose principle duty is to plan, coordinate research with the problems put forward by the extension staff and plan, direct and supervise the program put forward by the extension staff and the experimental stations. Agricultural education is given at the graduate level at the agricultural college of the University of Mysore. The technical specialists

of the department are also the teaching members of this college. There is the high school grade institute at which agriculture is taught. There are also four institutions where farmers' sons are given an intensive practical training over a period of a year with a little theoretical instruction to understand what they are doing. At the district level there is a district agricultural officer who is responsible for the demonstration and extension program. He is the coordinating officer of all research programs in that district. He is also responsible for bringing to the research specialist the peculiar problems of his district. He has nine to ten agricultural assistants, one each at the taluk level, to assist him in the extension program. There are junior field staff varying from two to three in each taluk to assist the agricultural assistant. There are also several farmers associations mainly of local interest and composed purely of farmers.

Q. What was the value to you of the study in Washington D. C.?

A. The value lay chiefly in understanding the background and the development of extension programs and methods used in the USA. The importance attached to the educational aspect and the place given to the farming community as the most part of such a program was very interesting. Of the methods employed, I was particularly interested in the audio and visual technique to carry through to the farmer the results of findings. It would have been possibly of greater help if a longer time had been spent with the publicity section and the soil and moisture conservation departments both at the USDA and at Beltsville. The visit to Maryland while certainly helpful in understanding the formation of community clubs and the youth movement in the 4-H and other activities of the young farmer could have helped more if more time had been spent with the farmer himself on his farm with a view to know more about how far governmental aid and the assistance of the several agencies, especially the county agent were helpful in his farming practices and up-grading his life. So far, after three weeks in the states, it appears that agriculture in the United States is principally one of producing stock and feed. In short, it is veered to a meat and dairy production so that the accent is laid on such crops as would assist in greater production of meat and dairy products. The problem of my own state is the production of grains and cereals for human consumption and feed for dairy industry. I feel that the problem of increased production in such a case is more complex than that obtaining in the States. In and around Washington soil and moisture conservation programs seem to have been fairly simplified by an adjustment of the crop program that large stretches of land could be put under grass, hay, or mixed grass and legumes which served a dual purpose of pasture and cover crop. This as I said earlier has been possible where stress is laid on the feeding of livestock. The problem of soil conservation where grain crops must be grown is certainly more complicated. (Did you pick up any ideas that may be of use to you in your own work?) The talks I had in respect of the methods of publicity in carrying over information to the uneducated were most helpful considering that more than 85% of the farm population in my is state are not educated and have to be informed by visual or spoken demonstration. By presenting on the screen simple and self explanatory pictures of successful agricultural operations, by giving talks on world and home events which would assist them in their life, by simplified exhibits, charts, photographs, and display of models -- this is what I mean by publicity. Also important to me was to hear about the important part the home demonstration clubs and the 4-H club organization play in developing mutual aid and a spirit of progressive citizenship. That was particularly interesting.

Q. What was the value to you of the study in Tennessee?

A. The talks we had with the various people about the methods employed on flood control, the problems of drainage, moisture and soil conservation were helpful in some of the problems which the western part of my state faces sometimes after very heavy rains. It was surprising even here to find that soil conservation, especially

erosion control, still was only by crop programs though the land was definitely undulating in character and had steep slopes and deep valleys. The rural electrification program attracted me particularly in view of the fact that we have on hand a similar program. Mysore is blessed with natural water falls which have been in two cases profitably harnessed and produce an appreciable amount of power. The credit facilities afforded by the REA for assisting the farmers in getting power and light to his farm were particularly interesting to me. The problem of finding water to provide against failure of rain is one that faces quite a large part of Mysore state and if power is made available it is believed that this problem can be largely minimized. It was, therefore, interesting to speak with the REA authorities and the electric cooperatives. (Did you pick up any ideas that might be helpful to you in your own work?) I think not so far as extension work is concerned. It was interesting to observe that the contact the county agent had with his farmers was limited by the time factor and the distance at which the farmer lived. This is problem which faces all extension workers all the world over. It also seemed to me that the county agent was possibly not quite so technically important as one expects of similar men in my own state because quite a few technical agencies seem to take over and help the county agent in that portion of the work. The county agent seemed to be more a source of information of where help could be had than a technical advisor himself.

Q. What suggestions do you have for ways the study in Tennessee might have been improved?

A. I don't think I have any in view of the short time we had there.

Q. What was the value to you of the study in Auburn, Alabama?

A. At Auburn I had the feeling again that there was too much of specialization and the research section was obviously not in close touch with the extension program. (Where did you observe that?) When we went into the peanut section. In the fisheries section the water conservation program was particularly interesting to me and this has been a common practice in the state of Mysore from time immemorial of having tanks and ponds in series or in rows to cover a catchment area and to stop depletion of the soils. Both as a source of water for irrigational and livestock purposes and conservation of all the water during the rains against the summer this method is used. The tillage laboratory stressed the engineering aspect whereas it would have been advantageous to have had the agronomic side also developed because to us the agronomy aspect is very important. The moisture conservation program and the formation of ponds and the methods employed for creating drainage basins and the consequent improvement of crop land was particularly helpful in future plans when such problems come up. Draining is one of the big problems we face.

Q. What suggestions do you have for ways the study in Auburn might have been improved?

A. None. It was crammed with fairly useful work.

Q. What was the value to you of the study in Tuskegee, Alabama?

A. It was an interesting experience to see how an underdeveloped people situated in a peculiar psychological condition have done so much and developed into an organized entity. How from poverty they have begun to emerge by their own efforts as people of substance and knowledge. Even more interesting was the help rendered by those who had got on to their more unfortunate brothers. (How do you mean?) Those who were better off helping the less able. That was what we saw mainly. (Did you pick up any ideas that might be helpful to you in your own work?) Well,

the methods employed in extension were similar to the ones which we saw elsewhere except that the tempo of advance was slower on account of the financial capacity of the farmer. This possibly would be true of the rate of advance or the want of it under our conditions.

Q. What suggestions do you have for ways the study at Tuskegee might have been improved?

A. None that I can think of.

Q. What was the value to you of the study in Missouri?

A. The program in Missouri may be stated to be the translation of the preliminary birds-eye view of extension methods, research practices, the work of associated agencies for the farmers benefit into a comprehensive study of the practical study of how an integrated program of research, planning and execution by extension could successfully be tackled. The study of the extension program in the state, the method of approach by balanced farming, the concept of soil productivity by a comprehensive study of the soil, crop and seasonal influences was most valuable in this period of study. I should particularly mention the very instructive hour with Dr. Albrecht which definitely showed that research when associated with the humanities must always redound to the benefit of the human element. The practical bias of the research problems was certainly interesting in so far that it is my firm belief that in this field of agriculture, departmental research people should give top priority to the investigations of those problems which are of immediate interest and consequence to the farmer whom they are serving. The planning and lay out of the experimental plots both at the research station and the experimental farm followed the usual lines but had a recorded history of long term work. Such records always help in building a proper program, especially where recommendations have to be made on soils and crops. The meetings with the FMA, the Farm Bureau and other farm organizations cleared the earlier pictures given to us in our journey through Tennessee, Maryland, and Alabama. It showed how much these action agencies were responsible for the successful execution of the educational program of the extension work. It was interesting to observe how much the OPS influenced the FMA in its farm support. This is an aspect of the question of rural credit which deserved more detailed consideration in how far such measures of providing cheap and ready credit to farmers can help in upgrading the life of the farmers in my own country. It was interesting also to see how a powerful organization like the Farm Bureau could make its voice felt and influence governmental action. Agriculture conceived as an industry had definitely given a status and standing to the Farm Bureau.

Extension work so far had been merely presented to us in theory with little contact of it in action. The stay at one of the counties (Camden) was a most interesting experience. No arranged program had been drawn up and it was therefore, an opportunity to see the county agent at work without any sort of desire to dress the window for our particular edification. I should at once say that this visit showed that with an active personality the county agent was a very influential person in leading the farmer in the adoption of improved technique and the up-grading of his own living system. It was a pleasure and a privilege to meet such personalities as the county agent and the home agent in this particular county. During our stay meetings of the farmers' clubs where plans for the future year were made by the farmers, themselves -- naturally associated with the technical authority of the county agent and the district supervisor; the 4-H club leaders and members; the community clubs, all these show in practice the important role the farmer plays in planning his programs. The plans evolved from the farmer. It was, however, seen that this planning was a two way system. The plans were discussed at farmers meetings with particular reference to the technical recommendations and the governmental assistance available for the planning year. The result was a



beautiful compromise as all achievements are which could be put into successful operation because it has been an agreed plan voluntarily accented by both parties. This aspect of farmer participation having a top priority in planning a program interests me particularly in that we have on trial such a system. It encourages me to think that with suitable modifications this plan may perhaps help us to achieve the objective of better production and greater productivity. While in Canderton we were taken to witness the judging of a grass land competition. While the competition itself was of the order common to all countries which hold crop competitions, the interest lay in the fact that this competition was sponsored by a land bank, a purely private agency on its own volition. The reason given by the secretary and the president of this bank was equally interesting: that a spirit of competition for better living among their clients meant better prospects for the bank itself. That is a very valuable conception which I personally would like to take back to my country and discuss with such similar agencies for adoption.

Last but not least, the privilege given to some of us to stay with farm families highlighted this visit. It was a valuable experience of how the farmer be he rich or on the subsistence level believed in hard and planned work and actually is one of the hardest working of his own team. The dignity of labor is emphasized in these people. It also gave me an insight into the innate kindness and generous hospitality of the farmer. It reminded me of my own people who, poor as they are, are known for their generous hospitality and kinship with the whole of the human race.

- Q. What suggestions do you have for ways the study in Missouri might have been improved?
- A. The program in Missouri was perhaps one of the best programs that we had on this whole trip. This is not to say that the other portions of the tour could have been shortened or even omitted. That would have defeated the purpose of our journey altogether. It is true that some portions of our tour could have been a little more elaborate but curtailment of any portion would probably have lost some aspect of the numerous subjects that have come before us and which in the longer and possibly later unhurried examination of our study tour may prove the vital link.
- Q. What was the value to you of the seminar in human relations and cultural anthropology conducted by Dr. Spicer in the New Mexico and Arizona area?
- A. The week in Santa Fe and the New Mexico area gives one much room for thought of the difficulties one experiences in a region of conflicting cultural relations and the lack of understanding, however well meaning, on the part of the executive authorities. Nevertheless, it was seen that where, as in the case of the Pueblo Indians and the Spanish Americans, there was contact with the expanding outer world and the influence of other cultures had been closer there was a perceptible amount of success in the extension programs. Where there was ideological difference as in the case of the Navahos and Hopis combined with the suspicion of the intentions of the executive authority, there was little or no progress that can be accounted for. This particular phase of extension in different cultural atmosphere requires deeper consideration than can be accounted for at the stage of first impressions. Nevertheless it possibly shows why in certain situations of antagonism, extension programs in my own country have not progressed. It is possible that the agency which operates these programs should be so selected as to have a sympathetic understanding of the people they serve and preferably with a cultural background as those people themselves. The discussions with Dr. Spicer and the woman in charge of the museum in Santa Fe were intellectual treats and it is always a privilege and a pleasure to listen to people who are in love with their subjects and enthusiastic. It has almost made me at any rate a social anthropologist for as one who has worked with the farmer for almost 20 years, I have always felt that the deep understanding of the other party is an important factor in obtaining

his confidence.

Q. What suggestions do you have for ways the seminar might have been improved?

A. It would perhaps be desirable to permit study groups to spend a longer time with each of the different cultural groups in their own locale. I could only stay with a Pueblo family and I would have liked to have stayed with the Spanish Americans and Navahos, too. It would also be desirable that the briefing on the culture and history of these four groups of people in this area should be a little more detailed and taken over a longer period.

Q. In conclusion, looking back over the whole study trip, do you feel that this study tour met the objectives you had in mind at the beginning of this interview?

A. To a very large extent this tour has given very interesting and valuable information on the objectives which I particularly wanted to observe in this country. I must say that technologically similar advanced information and practice is available with us and most of us are familiar with the technical aspects of the extension programs. In some cases, I hope I may say it, not with any view to underestimate the technical proficiency of the people we met. I felt that technical training and knowledge was perhaps a little more advanced with our people for this kind of work. Nevertheless, the very advanced methods of approach, the educational program, the active participation of the farmer, the training of the youth to be useful citizens, these have been most effective in making available the technical knowledge to these several people and helping in up-grading the life of the farmer and the farm communities. It seems to me that these aids and methods of approach could well be adopted, of course with suitable modifications to suit our own requirements. Of special interest to me was the large part played by the audio and visual aids in informing the farmer. The press was a very strong friend of both the farmer and the executive agency. It was interesting that on no day did a paper print without some valuable information for the farmer. It is no wonder that the farmer is so well informed and can participate and sometimes dictate his own program. The education of the farmer must be a first charge of our extension activities.

I would like to express how deeply indebted all of us are and I personally am to the Ford Foundation for giving me an opportunity to see the great strides that the American farmer has made and the important role that agricultural extension has played in that advancement; for the opportunity to study and take back and if possible use some of this interesting information for the benefit of my own people. We are especially beholden to Director M. L. Wilson and his colleagues, Miss Collings, Mr. Warner and others for their patience and extraordinary kindness in answering our questions, sometimes impatient, sometimes rude, but nevertheless put forward with a view to learning. To the numerous directors of extension in the states and to Mr. Henry, District Supervisor in Missouri and especially to Mr. Harold Sterret and Miss Jackson of the county of Camden, I am deeply in debt for all kindness and generous cooperation. It would be a failure on our part if we did not remember with gratitude our companion Mr. John Hall. I have often wondered how he could have taken 23 people with different wants and desires around with such marked success, with a pleasant smile and always with good cheer. It has been a privilege to have known him and to be told by him that one is included in the list of his friends. To Virginia Wilson the whole group owes a debt of gratitude. I personally have often said and repeat what I say, that I am lost in admiration in her ability to keep going in all hours of the day and night with always a cheerful word and a smile for everybody and never a sorry one. She was an example of the dignity of labor. It proved to us that knowing her associations and also knowing that people would not take it amiss if she slacked off she still

did her duty always cheerfully and well. Our associations leave me with one of the pleasantest memories, I would almost say the pleasantest, and it will be my endeavor to tell my children that duty well performed is a divine gift in itself.

MR. G. G. PHADKE

Mr. Phadke is Deputy Director of Agriculture in Vindhya Pradesh State. His previous experience was as Farm Assistant in the Institute of Plant Industry, Indore, and Extension work in the states of Jowra, Dewas, Ratlam and Bundi. He was deputed to Jawra State to reduce the area under opium and increase the area under sugar cane and to lay out two new farms and gardens. He increased sugar cane production so that a factory was established in Jowar. Mr. Padke received his university education in agriculture in India. He is 48 years old. He is an extremely intelligent, understanding, tollerant and philosophical person and his heart is most certainly in his work.

This, to my mind, is one of the most interesting in this series of interviews. One of the most fascinating parts of his interview is his description of his own cultural approach to extension work. (pp. 11 - 14) His discussion of what he sees as agricultural and extension problems in his state is also very interesting.

Mr. Phadke's comments all through his interview are worth reading. He says, as did almost all the men, that he did not have enough time with the heads of the divisions in the Extension Service in Washington. (See p. 4) On page 7, first paragraph, Mr. Phadke brings out an important point for any training program but a difficult one to actually work out. It is the difference between being told in a lecture and actually seeing in a demonstration. Demonstrations are much more meaningful but what Mr. Phadke wanted to see is very difficult and perhaps impossible to show to a large group with a limited amount of time at its disposal. However, if it could be worked out its value in training would be immeasurable.

There is so much of food for thought in this interview that I can not summarize it all here. I can only recommend that it be read in its entirety.

EVALUATION INTERVIEW WITH MR. G. C. PHAIKE  
DEPUTY DIRECTOR OF AGRICULTURE  
VINDEYA PRADESH STATE, INDIA

Q. When you arrived in the United States, what were your personal objectives for this study trip?

A. My first object is to study the methods adopted in the U.S.A. to carry all the results of research to the cultivators in such a way that he not only understands them but he puts them into practice with a view to increase his standard of living and help the nation in overcoming the food shortage of the country. The second object is to study the methods of mechanization and servicing facilities available to the cultivators of the U.S.A. so that the cultivator doesn't find any difficulties in keeping his machines in working order. The third object is to study how the financial needs of the farmers are met, whether by government agencies, banks or private individuals. Fourth, how the publicity work is carried on in the U.S.A. for the benefit of the cultivators. Fifth, how the best intelligencia of the farmers which is generally attracted towards industries, leaving farming in the hands of less intelligent farmers, is checked and how the intelligent farmers are induced to stick to farming. These are my main objects. (Any others?) These are the main objects and if I give you a list of minor points, they will be very many.

Q. What are some of the problems you face in extension work in your state?

A. The first and foremost problem is that our farmers are illiterate and are orthodox. It is very difficult to change their ideas and bring them to a stage to follow the most modern, up-to-date methods. Another thing is due to lack of irrigation facilities. The acre yield cannot be increased and consequently the economic conditions do not increase to enable him to invest in improvements. Third, my state is a hilly tract and is faced with a serious problem of soil erosion. Tons of fertile soil are being washed away by heavy down pour of rain fall averaging between 40 to 50 inches concentrated in the months of July and August.

Next, the land is uneven and fragmented holdings are a general rule with vast culturable land lying near-by not covered by vegetation which causes soil erosion and collective soil erosion methods cannot be adopted for want of education. Then there are transport difficulties. There are no good roads which connect the villages to the cities or market places with the result that the cultivator cannot market his produce to his advantage and has to pay heavy transport service or sell it to a middle man at a ridiculous price. Again, due to lack of transport facilities, the cultivator finds it difficult to get fertilizers from towns and manure his fields with the result that the production is low and the fertility is compelled to be maintained to a certain degree by following good rotation.

Next, the fodder crops are not possible to be grown, nor pastures improved for want of irrigation with the result that the cattle in general are poor in health which are the only source of supply of power and dairy products which are so essential to keep the farmer in working condition or in health. There are no available markets or storage facilities with the result that the farmer has to sell his produce when the prices are ruling low in the market in the harvesting season. As the cultivator cannot afford to withhold his sale for a brighter day for want of storage facilities and financial stringency he is caught in a trap. A farmer tries his best putting himself and his family to great inconvenience and admits his son in a primary school which is, as a rule in a distant village. When his son gets a primary education a sort of dislike is produced in him for farming and he is attracted towards the cities and towns where he hopes to get a better living condition and sometimes better prospects of marriage. Hence the farmer does not always like to send his sons to schools as he is afraid that he may lose help in farming and he will have to engage a helper. This is in short the background and to this I would only like to add one thing. Our state in general is a surplus

state in food and exports rice and wheat to adjoining deficit states, but due to a defective marketing system the farmer does not get the full return for his efforts while he has to pay very high charges for the article that he needs due to the extra cost of transport on imported goods for lack of good roads and transport facilities

Q. What do you see as the solution to some of these problems?

A. The first thing, the transport facilities must be improved so that the cultivator comes in contact with people of those states which are advanced and the marketable surplus can be transported easily to the deficit areas, reducing the cost from what it is at present. Then we must introduce agriculture as a major subject in all the primary schools where the students should be taught to farm with their own hands by doing manual work, laying stress on the dignity of labor and teaching them certain improved methods by which they will be attracted to stick to the farms and for this purpose we are just starting Bharad Samaja, which is a sort of youth organization on the lines of the 4-H Clubs by which farming interests will be created in the sons of farmers together with service for each other.

The third thing is to organize the agriculture department and strengthen the extension service branch so that it is effective and available readily for a group of 25 villages if not for every individual village. At present we have got no agricultural schools and it is intended to start agricultural schools in each district where more stress will be laid on practical agriculture rather than theory. These schools will be connected to the agricultural college at the capital. At present we have got only an intermediate course in agriculture at the college level which will be raised to a degree course as soon as funds are available. At present there is no connection between the college, research and extension departments. These need to be under one organization so that the problems of the cultivators can be investigated and not as at present that only those problems are being investigated which are not the problems of the cultivators at present but are aspirations of the student or the professor who wants to prepare for his doctorate. At present what happens in the U.S.A., the county agent gets problems from the cultivators and the research station solves them and gives the farmers the solution, while in our country in most cases the student picks a subject according to his own interest, conducts research, finds out solutions and throws it at the cultivator for whatever it is worth. Our state has been newly formed from various small states which had no organized agricultural development department. It was only a minor department attached to the revenue department, left to its own fate for development with only one advisor for a group of many states. Since 1949 our state has been formed and we want the agricultural department should be fully organized with research, teaching, and extension facilities that the modern times demand. Efforts are being made on these lines and funds are also being made available gradually, but we cannot man the department with proper persons as long as we have not got our own trained men. These are the solutions that are being worked on.

The limitation of irrigation is gradually being overcome on a very small scale by construction of minor irrigation works like the construction of tanks, dams, and wells. The aim of this work is to store all available water which runs to the streams and rivers by construction of tanks and big reservoirs to irrigate cultivated land in the villages lying at the lower level. Constructing these reservoirs do not require very great skill or materials. Vindhya Pradesh consists of undulating land and is not properly protected from the monsoons which come during the months of July and August, and there is a great run off of water into the plains outside of Vindhya Pradesh. If this run off is stopped and stored at suitable places this stored water can be utilized for irrigation purposes by which 50% per acre produce will be increased without any efforts and will give protection to crops when the monsoon fails or is not sufficient. This will also tend to increase growing periods for the crops and consequently the acre yield will also increase. The



cultivator will be able to use mineral fertilizers to maintain the fertility of the soils and return back to the soil what he extracts annually as due to adequate moisture the application of fertilizer will give the maximum results.

The cultivators of Vindhya Pradesh are well aware of the washing of soil fertility by rain fall and other agencies. He raises embankments on his fields with a view to stop soil erosion, increase the moisture content of the soil and also to take advantage of the humus washed away from the fields of poor cultivators who are not able to embank their fields with the result that richer cultivators are growing richer while the poor grow poorer. For this for the last three years the state has been advancing loans on easy terms to poor cultivators to enable them to lock the fertility in the fields. But even by this method the object is not fully served. What is desired is to have embankments on contour lands to stop erosion in general. In concentrated blocks this is being done but the results achieved so far are not encouraging for lack of education and cooperative spirit amongst the cultivators. This can only be removed by adult education and inducement by the leaders which will have to be created from the cultivators themselves. Further efforts are being made by actual demonstrations in the fields but the results achieved are not very visible to the cultivators and at present he is not in a mood to pay heed to slow improvements which cannot bring him quick return so he will have to be convinced that the return, however small it may be, is not only permanent but will increase day by day, and the fruits will be harvested by his younger generation.

(How are you tackling the problem of orthodox farmers?) The traditional orthodox ideas can be removed by adult education which will be started as soon as some leaders are trained from their own communities and a scheme on these lines to train leaders has already been launched. The number of demonstrations have been increased and there is a ray of hope as some of the cultivators have been convinced and are coming forward to help the extension service to spread the new ideas amongst backward cultivators. As soon as their sons are trained in the agricultural schools and come back to their homes after education they will convince their old folks and will implement it. That is the plan. (And that is where extension is very important.) Yes, very important. A start has been made by establishment of a land army in which short courses in agriculture are given to the college and high school students and they on their part go back to villages during vacations and impart the education to their community members. Only fundamental principles in a crude way are taught to the students and they are asked to deliver that information to the cultivators neither more nor less, and if there are more inquiries they should ask the community people to contact the nearest agricultural officer. For example, a student is told that it is necessary to manure the fields and he also is taught a basic dose for major crops. He is asked to go back to the village and ask a simple question to the cultivator of his village: "Look here, gentlemen, what I see is that you have taken out 20 maunds of yield from your field in the shape of fodder and grain and how much manure have to added to the soil?" The cultivator's answer will be "I have not added even a grain of manure." His next question should be: "How long do you expect the soil to give you these yields unless you make up the loss of the soil by addition of manure?" The cultivator's answer will be: "Why should I add manure when I am getting a produce without the addition of manure?" The student should say, "My dear uncle, the soil has given you some produce as your forefathers built it up by addition of manure and other efforts. If you exhaust the soil year after year, it will become unfertile and your sons will be starved and will not be able to make a living on your land. Just consider you, being a religious man, whether you are not committing a sin of starving the soil which was given under your custody by your father to hand over to your son in improved condition and not in deteriorated condition." When the religious instinct of a farmer is touched his brain wave begins to move and he thinks of improvements and then the foundation is prepared to impart other improved methods of cultivation.

Q. What was the value to you of the study in Washington D.C.?

A. In Washington we were mostly oriented in the organization of the agricultural department of the U.S.A. with different set-up in the states right to the county and village level. This is very much appreciated as without this it would not have been possible for me to critically study what we observed in our future tour. The thing that impressed me most was the coordination of teaching, extension and research work. Our doubts about the proper coordination between the three were removed when we saw the farms in Maryland, Tennessee, and Alabama. Now, that was the value of what we saw in Washington. I did not find much use in the airplane demonstrations for killing insects, manuring, etc., as it will be long before we shall be able to adapt these methods to India.

(Any other suggestions about what wasn't necessary or what you wished you could have had more of during that study?) When we were shown around the research station hurriedly, allotting a few minutes to each section we felt that we should have been given option to only see such parts of research work in which we were interested or in which we have problems. This could have been done by grouping ourselves in various groups and giving option to us to select our own interests and devote the time for critical study which was otherwise wasted in the subjects in which we did not find interest. Then, also, we felt that we should have been given at least half a day or one whole day with some of the extension department heads, if not all of them, which was done hurriedly in a group of five or six, hardly allotting 15 or 20 minutes. When we were taken to the farms in Maryland we were shown bottles of preserved food. What we were interested in was the method of preservation of food practically demonstrated on the spot by the housewife and to have details explained. When does she get this time to preserve food and also to explain to us how the time of the housewife is utilized in work and what are her hours for recreation and the source of recreation. We also saw kitchen equipment. Standard equipment was demonstrated for us by the home economics branch at Beltsville. What I felt was that there are bound to be farmers of various means who will not find it possible to adopt the standard equipment as they will find it beyond their means. Hence, equipments for various grades, at least three, namely for rich farmer, middle class farmers, and farmers with low income should be standardized.

(Did you pick up any ideas that might be of use to you in your own work?) Yes. The first idea that was picked up by my mind was the coordination of research, extension and teaching under one. Another thing, the close contact of the county agent with the farmers; that is, he knew everybody and the farmers had great respect and confidence in him and his achievements are to a greater extent due to this factor. That was demonstrated to us in Maryland. Then another thing that struck me was that good farmers who have something to their credit had at one time belonged to the 4-H Clubs. Another thing, the farmer devotes himself fully to the production side while the housewife or the mother maintains and looks after the economic side of the farming. Whenever we asked any farmer what was his income and expenditures, he was not able to reply but his wife could! Another thing I observed was that the interest in the profession of farming is created amongst the children even at as early an age as five. This observation was made by me by observing a small boy of five who was tending the poultry, tending to turkeys and raising ducks. Another thing was the processing of beef. We visited a cooperative factory where by cooperative efforts the facilities for processing farm products had been made available to the cultivators for a group of counties and thereby the middle man's profit is earned by the farmer. (Also see comments under Auburn)

Q. What was the value to you of the study in Tennessee?

A. First, I was impressed by the TVA. If any purely government agency had undertaken this work the results achieved so quickly would not have been achieved and may

have been given up. Either political position or lack of funds and the cultivator in general would not have been able to get advantages of cheap electricity, improved fertility of the soil and such other aids that he is getting. What I mean is that the TVA is not a purely bureaucratic body, but has a board elected. Development work is neither done under the strict dictation of the government nor under the dictation of public bodies in power; both the systems have got advantages and disadvantages as well. The formation of the TVA is such that the advantages of both these types have been pooled and it is why in such a short time with all the political opposition and capitalist opposition great achievements have been made not only to the advantage of the farmer but to the advantage of the nation in so far as the floods have been checked, cheap electricity has been produced and consequently, the most fertile and backward area has been converted into a land of plenty and has been highly industrialized.

(What other things interested you in the study in Tennessee?) The specialization of farming has been best illustrated here and also the help given by the extension service in changing the mode of farming and changing it to such a mode of farming as give better returns. This was illustrated by a farmer who had been practicing dairy farming and who has now switched over to the fattening of animals for meat. This was done due to the fact that more labor is involved in dairy farming than in farming for production of meat, taking into consideration the size of the farm.

We also saw Oak Ridge. People in the street have a feeling that investment on atomic research is only for destruction of man kind and civilization but if one cares to see the type of research which is being carried on and the results achieved so far will convince that person that that investment is a good investment as in the near future it will not destroy civilization but further improve the civilization and bring home more comforts with less efforts and the necessities of life.

(Did you pick up any ideas in Tennessee that might be useful in your own work?) The soil conservation methods and methods to stop floods and building water reservoirs is a unique achievement of the TVA and should be undertaken and can be undertaken in Vindhya Pradesh. And as I mentioned above the converting from one type of farming to another. Another thing that interested me in Tennessee was that the farmers also have recreation on week ends and during holidays and put into practice their right to recreation. This I observed during the day we visited the Smoky Mountains when I asked people there whether or not they were farmers and about 80% of them visiting there were. Also I was interested in the preservation of forests and to my mind well distribution of rainfall throughout the year is due to well preserved forests and properly spread forests. We visited a paper pulp factory. The idea about that factory is quite good and will give part time employment to the farmers, but the danger is that the factory may attract intelligent farmers if care is not taken to see that the wages earned at the factory are not more than what a farmer earns on his own farm. The factory should not have its own plantations because when the plantation is ready the farmers who have got wood lands will not be able to dispose of their produce to the factory as the factory will utilize its own produce first and may not offer attractive prices for the produce of the farmer and as such the new plantations particularly should be less than the requirements of the factory, equal to the farm forest production. One more idea. Though the living conditions of the farmers have improved and they are getting all modern comforts, even then they have not forgotten the existance of God, which will keep their morals and inspiration high.

- Q. What suggestions do you have for ways the study in Tennessee might have been improved?
- A. I have the feeling that our time was very well utilized in Tennessee and we never felt that we were being taxed.

Q. What was the value to you of the study in Auburn, Alabama?

A. At Auburn there was mostly repetition of what we saw in Tennessee with an addition of fish culture and the Tillage Laboratory for testing the efficiency of agricultural implements in general and tires in particular. This is very valuable research and will save your farmers a lot of headaches if suitable investigations and results are arrived at. But those things have no application to us. The lecture on visual aids was very interesting and those methods were very impressive and that is really a way to teach extension personnel and others. That work that is being carried on in the Tillage Laboratory was interesting, however. I have had some experience with difficulties in tire pressure under friction and heat and changing weather conditions. Side rims wear out with the result that the tube comes out and the tire has to be changed even though the treads are in tact.

Q. What suggestions do you have for ways the study at Auburn might have been improved?

A. I can't say that the time was wasted in the fisheries or at the Tillage Laboratory, but the time could have been cut short and could have been better utilized by visiting farms in that area.

One thing I forgot to mention about Washington. The lecture by Mr. Kenneth Warner was a model lesson for us to train our extension personnel; especially the method was quite new to us and will penetrate the student without exertion. The method has been perhaps evolved from the deep study of psychology of the farmer, his sons and the needs of the nation. Mr. Warner first made three pictures of boys and girls. When they reach maturity they want new ideas, some fun, and some new associations because they find that their home world is too small for them and they come out and try to mix with grown up children but find that they do not get what they want. Then the other line for them is the 4-H Clubs where together with other things they find a profession for their whole life to make a good living. Then he explained how to get problems from farmers and how to analyze them and gain the confidence of the cultivator. That was most important to us. I have taken down the whole lecture and I don't think I shall ever forget this lesson in my whole life. The way in which he illustrated his talk was most unique.

Q. What was the value to you of the study at Tuskegee, Alabama?

A. We were under the impression that as with the case of other nations the backward people or less developed people, that is, the Negroes, are not cared for in the U.S.A. But when we visited Tuskegee and farmers' holdings there we found that equal attention is being paid to improve the lot of these people, maybe more than the common man of the United States. The efforts made in housing projects is praise worthy where the capital has been made available but the farmer was compelled or encouraged to use his spare hours in the shape of labor to build his own house which he could never think of having, even in his dreams, without the help of the extension service. To minimize the skilled labor in building of houses the new methods of preparing concrete blocks has been found out and the farmers are taking advantage of the same. If this had been taught to us in the class room we would have hardly believed the achievements, but when we practically saw and got the story from the cultivators themselves we were convinced about the usefulness of the extension service. That is the main thing we saw in Tuskegee. It was clearly demonstrated to us how the will of the man has been developed to work and work not only for his own comforts and better living but for building a strong nation.

Q. What suggestions do you have for ways the study at Tuskegee might have been improved?

A. The tour of the Institute and its facilities was something of a repetition. Everywhere classrooms are the same. There is nothing new for us in it. And I wish a demonstration could have been arranged, because there are less progressive people there, to show in a community meeting how the county agent induces the farmer to take advantage of the improved methods and how he changes his old methods for new methods for his own benefit. We have been told that this county agent told the farmer to do such and such and the farmer switches to that, but we want to see how a county agent actually converts a stubborn farmer to adopt new ideas presented by the county agent. All along we have been told, "Take it for granted that this has been done by the county agent" but we have not seen how it has been done. I want to see how they are converted to new ideas. This would be most meaningful to us because we face this situation.

(Did you pick up any ideas at Tuskegee that might be useful to you in your own work?) The method they use for preparing cement blocks for housing and the method of promoting self help, eliminating the necessity of skilled labor. Another thing. That preservation of food, that community canning center where a farmer could bring his food to be canned and take it back home was a very good idea. Our farmers have lots of fruits and green vegetables but these things they have to purchase from the market in the off season at a high price. Now, if such a canning center is made available to them they will not only save their food for off seasons, but they will save some of their produce and the cost of labor utilized in processing the food will remain with the cultivator.

Q. What was the value to you of the study in Missouri?

A. The greatest value of the study we had in Missouri was in balanced farming, or in other words, how to preserve the balance of fertility in the soil. Dr. Albrecht changed, by his demonstrations, all our ideas regarding the weeds in the fields and how to help the maintenance of soil fertility by allowing the weeds to grow taking precautions to see that they don't interfere with the main crop of the field. Then another thing. In Missouri we had a chance to study the practical side of the work of the county agent, the home agent, and how the work of the 4-H Clubs is conducted and its practical application in the field of operations. We were also offered a chance to live in the families and within a week I lived with three families. But the time allowed was so short that it was a difficult job to get the information needed from them, but it was a great opportunity and we could learn more of the value of extension work and its application from the farmers in this one week than what we have learned in six weeks in back of us. It was observed that the county agent is a very popular fellow in the community and everybody valued his advice and wanted to make contact with him as much as possible, if not personally, at least by phone. Everyday during the few hours that we were in his office not less than two dozen telephone calls were received and the number of visitors was not less than 15. The most extraordinary thing was that he never refused interviews to any visitors nor ever lost his temper but gave all the needed information in the most humorous method, many times disagreeing with them and their suggestions and pushing forward his own ideas with tact. The cooperation in the staff members was of the highest order and none felt the subordination of the others. In other words, they worked on equal levels. The advice given by the county agent ranges from purchase of estates to the kind of crop to be grown in a particular field. The popularity of Mr. Hall, the county agent, was so much that always he has to stop every five minutes to talk to farmers, 4-H boys and girls and many others who belonged to the profession other than farming, but in every source of contact he did not fail to press forward some of the extension methods which could benefit the farmers.

(Did you pick up any ideas that might be of use to you in your own work?) The main thing that I picked up was how to make approach to the farmers by different

methods depending upon the problems and the temperament of the farmers.

Q. What suggestions do you have for ways the study in Missouri might have been improved?

A. I feel that the time we spent in the university was too long and we should have spent more time with families, and with one family we should have been allowed at least three days with them instead of 12 hours. And we needed more time to observe practical demonstrations. I wish we could have attended more meetings where work was being planned by county agents, home agents, and 4-H Club workers.

Q. What was the value to you of the seminar in cultural anthropology and human relations conducted by Dr. Spicer in the New Mexico and Arizona areas?

A. We did not have much time to study the different cultures of the Navahos, Pueblos, Hopis and Spanish Americans but comparatively I found more time to study the Spanish culture as I stayed in a Spanish village, Truchas, for a night and contacted about eight to ten farmers. From the contact I had with them I could study that the Spanish people love the home of their ancestors and try to stick to the same even though they can hardly make a living on the land in their possession. To supplement their living cost they generally go to work either in mines, factories, or odd jobs like carpentry and so on. But they do not like to leave their homes and go to cities for not only better living but better type of work. It was also gathered that they have not moved more than about 25 miles from the original locality occupied by their ancestors about 300 years ago. They have got very vague ideas of religion and they think that Christianity consists of attending churches on Sundays at their will and fasting in October and March. Ranging between a fortnight and three days, the fasting consists of avoiding breakfast only and meat at dinner and supper. Their sanitary habits are not very good and toilet rooms were as dirty as could be. Their washing habits are also not good as in trying to economize on the use of water at small basins they do not properly clean their hands or faces. For want of a bathroom they do not take a bath every day and perhaps only take a bath on such occasions when their bodies and minds refuse to work without it. They seem to be a bit spendthrift. The women folk are shy as a general rule and are frightened by visitors. The contact with these people is a big job and the language difficulty is an obstruction. They try to stick to the old culture and are not anxious to absorb themselves in the modern American culture. The men folk and the younger generation in general seem to be more anxious to get themselves absorbed in the general pool of culture of the Anglos and are prepared to marry girls of any origin except Indians. While inquiries made from the girls indicated that they will only marry young men of Spanish origin alone and do not like to move away from the locality for whatever attraction the other places may have in store for them. As regards county agent work, it was observed that it was neglected, the bottleneck being transport facilities, the small holdings of the cultivators and part time interest of the cultivators in their supplementary jobs.

The cultivators are in the habit of depending upon natural manures rather than on commercial fertilizers. In short the farming occupation is practiced not on commercial lines but as a profession of their ancestors. One good thing which was noticed was that the people are showing the desire to have modern houses with comforts and all the savings seem to be invested in building modern houses, but no attention is paid for the addition of a bathroom. An interesting feature of the nation was observed here. There is a welfare fund and lifetime pensions ranging between 20 to 40 dollars a month which are being granted to widows and old persons not able to work for their living. The most important feature noticed was that an old farmer was asked the question, "Why has your invalid wife not applied for this pension?" The reply was, "She can easily get it but as I can provide for her I do not want that she should apply for it as if she exercises her rights the allowance of a native person not able to get along without it will have to be cut short as the funds are



limited." This shows how sacrificing a nature these old Spanish people have for their society. They also try to stick to their old food habits and depend more on home cooked food rather than the food they can get from stores, unlike the cultivators of Henry County, Missouri.

Now for the Indians. It was clearly observed that their standard of living is very low and all the facilities the nation has offered them, they have not made headway in increasing their standard of living or added to the production of the country. (Why do you think that is so?) The reason for that is that sticking to the tribal customs, aversion for work and no aspirations for the future generations have kept them from it. On the whole their living habits look a bit dirty and very little attention was paid to keeping the house or the surroundings clean. They have a strong desire to obey the rules of the tribe and follow all rites and rituals suggested by the head of the tribe. From whatever stories we got about those people (Mr. Phadke is speaking of the Navahos) it can be gathered that their people live within the tribe and follow all rites and rules which may go to the extent of dictation by the head of the tribe.

But from the living of some of the families it is observed that a beginning has been made and people have started taking advantage of the facilities offered on the Reservation. If county agents from among the tribes are trained and appointed, more progress could perhaps be made. What is needed at the present time is education of their women folk through tribal home economic agents. We found some of the waitresses at the Window Rock Navaho Cooperative Motel belonging to groups of Indian people who are educated. If these girls are given the training of a home economics agent they would be in a better position to convert the women folk in the tribes.

Q. Did you think that seminar was a good idea?

A. Yes. The seminar in the week from Santa Fe ending up at the Grand Canyon was a unique feature of our study tour and there we learned the most interesting feature of how to approach various cultural groups of man differing from each other in their development. If we had been oriented on this we would not have been able to study the culture of the Navahos, Pueblos, and the Spanish Americans. The main idea behind that week was to thoroughly study the background culture, modern habits, etc., of the different cultures first and then see how to approach them through the cultural door which is an easy door to enter. In that week we studied in detail three different groups of people having different conditions of living and different facilities offered by nature for making a living and how various problems had been solved by the Indian Service Agriculture Department to enable the persons to make a better living. In this week we also had the opportunity of studying geological formations of the tract and how the advantage of that can be taken in the present crop planning.

(Did you pick up any ideas that might be of use to you in your own work?) Yes. Two main ideas were picked up at this seminar, the first being the approach to the people who are culturally backward but are anxious to come in line with the modern civilization and way of living, but still preserving their old good points of tribal religions, religious beliefs, and also the brotherhood on which their society is based. What I mean is this. Dr. Spicer has not touched their religion. They are still following their own religious customs, but only they are being oriented to add to the country's production and their own comforts. The other idea is, how to bridle natural resources and divert the water of rivers from the places where it is not needed to the places where it is needed the most. Then again to study the geological formations of the locality and the plant crops according to the available mineral resources of the soil and the texture of the soil was interesting.

Also important about this week was that we came in contact with cultivators who have small holdings with a firm cultural background which cannot be easily modified and also water scarcity and fragmentation of holdings. Such conditions are common

in India and people study how the problem can be approached and solved by making work available in factories and other industries to supplement the earnings of the farmers to enable a man to make a good living.

Q. What suggestions do you have for ways this seminar might have been improved?

A. Repetitions should be avoided and the time so saved may be utilized in allowing the party to live with families for at least a fortnight and the members should be allowed to select their own families and live with them. Opportunity should be given to work with the farmers so as to gain their confidence before a close study of the people and their culture is made. What was needed was to see more of practical demonstrations on the working of machines or crop planning and in the planning of the extension work among these people. The group should always be very small. If it is big it should be divided into not more than four in a group. Members should be given the chance to work out a program for given problems with the help of the county agent and to put it into practice at least for a fortnight, as for example, a program for terracing a field in a county should be drawn and a member should go to the fields with the county agent and actually lay out the position of the contour lines where the embankments are to be put. Then the implements should be arranged and the member should be allowed to get the terracing of at least a field done in his presence or in his own hands.

(How do you mean, repetitions should be avoided?) From the very beginning and in every state we have been told the organization of extension. If that time could have been saved it would have been better spent in observing practical demonstrations and in studying the culture of the Navahos, Pueblos, and Spanish Americans. We should have had more time so that we could actually have lived with Navahos and Pueblos as we did with the Spanish Americans. When we spend time by ourselves living with families we learn better, because when we are lectured we are to hear only those things which we are told, so the best thing would be to first tell in brief what to study after giving a background of the culture of the people and then let us alone to learn about them and then discuss in a seminar at the end what we have learned. Then correct any wrong impressions that may have been made and add what we have failed to pick up.

I think it was also a good thing to include some sightseeing in a study tour as we did by going to the Grand Canyon, but also sufficient time should be allowed to absorb our observations and then have seminars when we have overcome our tiredness. This is true of the whole tour. The programs were so crowded which compelled us to forego some of the programs and take some rest, or see some of the sights which were not included in the program.

The trip through the Hopi Country interested me on the way to the Grand Canyon but more time should have been allowed so that such long trips were not necessary because the time spent in travelling was more than the time we could spend contacting the people. Two weeks should have been given for this seminar and at least one hour with Dr. Spicer separately because no doubt his lectures allowed questions time but the time was so limited that every member of the party can not ask as many questions as he wanted to and is forced to hear something in which he is not interested in at the sacrifice of the questions in which he is interested. We also would have liked to have had Director Wilson with us throughout the whole trip because a talk with him for only 15 minutes is more valuable than talking with a county agent for one hour. We badly needed him in Tennessee. In Tuskegee we had the advantage of having Mr. Tom Campbell. In addition to the seminars, opportunities should have been made available to talk to eminent persons for at least 15 minutes in a week.

Q. While we were in Missouri you told me some stories which I think illustrate your own cultural approach in extension work for bringing about technological change. I think they fit in so well with the subject you have just discussed, would you mind repeating them now for this interview?

A. Well, here is my story about selection of seed.

At present the cultivators in India do not select their own seed for the next years' sowing. They sell all their yield without saving the best seed for the next year. They purchase seed each year from local dealers which is generally a bad selection of seeds. They sow these seeds in the fields with the result that the yield per acre is very low. This story that I used was intended to teach the cultivators the method of seed selection by approaching their religious sentiments. The story was told through the head man of the village who had the respect and confidence of the villagers. Here is the story that was meant to bring about a change in attitude in selecting the best seeds for sowing.

"In olden days the cultivator never harvested a field without offering worship to the Master of the Field, or in other words, the God of the Field. In modern days the cultivator has forgotten this and harvested his crops without offering worship with the result that the Gods or devils in the field are not appeased and the yield is low and getting lower day by day." After this introduction to the story the cultivators are anxious to learn what the old system was and how to offer worship and what to do to increase their yields.

The story continues: "On the day of harvest, the cultivator and all his family members collected in the field and they also invited their friends both men and women, boys and girls to join the serimony. The priest of the village conducted the worship with the usual rites and rituals and at the end of the worship he asked every member of the gathering to lay on the border of the field offerings for the God. These offerings must come from the field itself. Then the priest asked every member of the family to take a plot nine feet by nine feet and select the best five ears of grain from that plot. This bundle of five ears was treated as offering to the God. In this way for about 100 to 150 years the best in the fields were collected and kept as sacred and used as seed for the next year. This being sacred and offering to the God it was carefully stored till the next sowing season. It was then separately sown in the field and again reselcted for the following year. By this method within a course of five years the cultivator would have the best seed and consequently his yield per acre would increase."

By aposaling to religious feelings and their love of the soil, this story motivates and illustrates to the cultivators how to save their best seed for the next year's crop.

Here is another story.

The cultivators do not prepare a fine pulverized seed bed for wheat but sow their wheat in a rough seed bed with the result that the crop doesn't get an early start which tells on the yield and the quality. The following story is meant to illustrate to the cultivators the need for preparing a fine seed bed for wheat.

"A newly married girl in a wealthy cultivator's house was asked to stay at home and prepare bread for the family when the rest of the family members were out in the field preparing the field for wheat sowing. She was asked to have the lunch ready at 12:30 so that the people could go back to the field early in the afternoon to cope with the pressure of work. The daughter-in-law kneaded the wheat flour and had it ready for baking the breads and in the meantime made herself busy in preparing vegetables and beans. It so happened that a crow entered the kitchen and took away some of the dough. The noise attracted the attention of the daughter-in-law and when she entered the kitchen she found that the bread dough

had been spoiled by the crow. That dough she did not like to use for preparing the breads and started grinding wheat again as she believed that palatable breads can only be prepared from freshly ground flour by hand. She felt sorry about the flour that had been prepared in the morning because for this she had had to rise very early. When the new flour was prepared it was a bit too late to get the bread done in time for lunch. The head of the family, that is, the father-in-law, was enraged at the daughter-in-law and told her: "I don't care what training you have been given in your home by your mother, but I believe, as well as every member of this family, in regularity and in the future I hope you will keep time and finish your work at the very minute you are requested to do so." The daughter-in-law said in turn very politely that she believed and loved to do everything according to the time table but the unavoidable circumstances today prevented it. On this statement every member of the family became alert and wanted that a patient hearing should be given the new member of the family and she was asked to say her saying. She said: "If I may be excused, I will give away my feelings. The flour that I get here has not got sufficient elasticity and because of that the crow took away and spoiled my flour. I feel that the responsibility for this falls on the shoulders of the men folk who did not prepare the field properly and did not add sufficient humus to the field. My father has told me that the quality of wheat is bad if the field is not properly prepared and if enough manure is not added. When I grew up I conducted experiments in the field and found that what my father said was correct. If you introduce the system in our fields there will never be any trouble in the future like that I had this morning and no inconvenience would be caused to other family members." Then she said, "Any questions?" The younger brother-in-law who had just attained the age of working in the fields asked her, "What is the test for the good preparation of the field?"

She said, "The soil should be so pulverized that if a woman having a pitcher full of two gallons of water on her head throws that on the ground it would not break. If it breaks the field should be pulverized more. If this practice is followed you will not only get delicious breads but also your wheat will fetch better prices for the quality in the market."

The family decided the daughter-in-law was right and changed their methods of preparing the fields for wheat with the result that the yields were higher and the quality of flour was better."

In India the cultivators are mostly busy in their work during the day and are not in a mood to hear any sermons in the day time or to collect at a central place to absorb some piece of advice. The best time to get them to hear you is at night when they collect either at the house of the headman of the village or at the place which is called "Panchayatager" or, in other words, the house meant for the meeting of the board members elected by the villagers to settle their disputes domestic as well as social. Since they collect after supper and need some recreation after a hard day's work they are prepared to hear these stories. A man who tells them religious stories or historical stories or the current news is very much loved by the villagers and they are always ready to hear them even at a late hour of the night. The man who tells stories is generally the headman of the village or a member of the board or a young man who has had some education in the schools or colleges and has settled down in the village for farming. It is always better to tell these stories through such a man as he recites them in his own language adding the local humor as well as makes some of his own poems and verses and sometimes sings. Then after these stories are told, the next morning those cultivators who showed more interest are picked out and they are contacted in the fields and are actually demonstrated many of the methods of improved agriculture which have bearing on the stories.

Once when I was working as agricultural officer in charge of extension work in one of the princely states, I noticed that a lot of irrigation water was being

wasted in a locality where water is scarce. That state lies on the border of the desert and winter crops cannot be grown without irrigation. The state had installed a pump on one of the field wells and the pump was commanding an area of about six hundred acres of wheat and sugar cane. When I inspected the project I found that if proper use of the water were made, 25% of the area could be increased.

The county agent of that place was called by me and I asked him how it was that he had not taught the cultivators the right use of water. In reply he told me that the cultivators were not willing to hear him and they are going their own way. He said, "When I try to approach them they say, 'You have been taught only foreign methods of agriculture and they are not suitable for our tract. Moreover, you are so young that we cannot expect much from you. Our experience is very tanned (old) and our methods have been evolved by long experience. The farming on these lands is very sound and we do not want to gamble on your raw experience and foreign methods.'"

Then the county agent said, "Before more damage is done to our extension service you should yourself visit the place and make the ground easy for us."

I went to the village, of course dressed in the way which is done in Indian cities and tried to contact the villagers. Some of the villagers I knew well and they knew me very well. The first question they asked was why had I sent this man dressed in European style to teach them farming (meaning their county agent). I told them that this man has newly joined the department and does not know much of the local practices of farming but otherwise is a very intelligent man, a hard worker, and has an intense desire to serve the cause of the cultivators. I thought with some experience by working with farmers he would be a very useful man and I had particularly detailed him to this village as I thought there are no better cultivators in the state than are found in this village who can give him the specific training he requires. Then I had a very light talk with my friends on current topics and market rates of agricultural commodities.

Then all of a sudden I scratched my head and said that there is very interesting news about the war in Korea. The cultivators got interested and asked me to tell the whole news in detail. I told them, "It is no use telling the story to you few alone as other cultivators may like to hear it as well and I may have to repeat it. Moreover, it will be a loss of time and the out-put of your work will be less if you waste time in hearing my stories." I left them and went back to my tent.

In the evening I asked the county agent to dress in the way the cultivators do and I did the same and we went to the Temple and were having a discourse with the Priest of the Temple on the mythology of the Hindu religion and entered into a heated discussion on very minor points. In the meantime, the cultivators began to pour in and started taking interest in the discussion. When a sufficient crowd had collected I compromised with the Priest on the point and told the audience, "Your Priest is a learned man." The Priest told the audience that I knew more than he and that I had come to the village to meet the cultivators and would be right glad to have a discourse with them and that the villagers would be losing a great opportunity if they did not hear me patiently. With this basic preparation, I started giving them a talk on how to level the land and make economical use of water with a view to increasing the area under irrigation and consequently their income.

The next morning to convince them, a practical demonstration was arranged and given where most of the work and talking was done by the county agent. The cultivators were pleased by the demonstration and said, "We shall start the leveling of our fields from tomorrow".

The county agent said, "Why not make a beginning today?" And I added that this was the most auspicious day and the operation should be started from today.

That evening I again got them collected in the Temple and repeated the same talk to insure that they knew the job thoroughly. Then again I asked the county agent to repeat the same and gain their confidence. I told them various stories



of the county agent and convinced them that he was one of their own and had come to learn from them rather than to teach but would certainly take the liberty to remind them of those improved methods of agriculture which they had either forgotten or are not practicing.

I always try to give the cultivators the idea that I have come to learn from them and not that I have come to teach them.

Q. Looking back over the whole trip now, do you feel that this study trip met your objectives which you outlined at the beginning of this interview?

A. My first object regarding the way research information is carried to the farmers has been met by the study of the methods used by the U.S.D.A. and I feel that with some modification it can be made applicable in India and a great problem will be solved. (Would you explain that in a little more detail?) The method consists of studying the problem of the cultivators, their cultural background, and then making the information available by methods which are best suited to his temperament, making use of visual aids, short stories, etc. My second object was to study the methods of mechanization and servicing facilities available to keep the machines in working order. The cultivators of the U.S.A. are advanced in mechanization and do not find the need of a third person to keep their machines in order for minor defects, and the farmer himself operates most of the machines. Hence, in India, the cultivator will have to be taught to operate his own machines before he purchases any machines so that he may not be required to depend upon hired operators. The third object, the financial facilities which are available in the U.S.A. are not available in India and it is not possible to follow the methods adopted in the U.S.A. in credit. The fourth object was to see how sons of intelligent farmers are encouraged not to give up the occupation of farming when industries are developed in the vicinity of the farming area. If the youths are given a chance to supplement their income by part time jobs just as we discussed during the seminar on the Spanish Americans that trend can be stopped whereby agriculture suffers from losing intelligent farmer to industry.

The problems have been solved and are being solved in the U.S.A. very rapidly, as, from the very beginning, that is, when the youth attains the age of selecting his profession in life, he is offered facilities in his primary and secondary education to select his own profession for the life which he likes and this is being done through the organization of 4-H Clubs, which not only create a taste in them for farming in early youth, but their learning helps their parents in their day to day needs. Such clubs are being organized in India under the name of Bharat Samaja or Land Army.

I have profited a great deal myself by this trip and with the clear ideas of extension work I shall be able to plan the extension work in my state in a better and more effective way and to be able to train workers at district and county levels and at the same time voluntary leaders in the villages.