

Science for Nicaragua Newsletter

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Economics and Planning in Nicaragua Part II of an Interview with Robert Sutcliffe

This is the conclusion of a two-part interview with British economist Robert Sutcliffe, who taught with SfN in Managua in 1987, in the Sociology Department of the Universidad Centro-Americana (UCA). Part I, dealing with Nicaragua's economic crisis, was printed in the last issue of SfN Newsletter. Back issues are available from the Cambridge office of SftP.

SfN: You said [in Part I, ed.] that developmental economics as a practice is dead. But you were teaching developmental economics at the UCA.

R.S. I was actually teaching a course in social and economic planning in third world countries. So in a sense I was teaching developmental economics. I'm not saying it ought to be dead, it's more that very few countries have the objective circumstances in which they can practice long-term economic planning at the present time. The other aspect of the economic study of the third world, which is not dead, is what you might call critical developmental economics. In other words, not developmental economics as a means to formulate policy, but as a means to critique the economic structure of the world and the economic situation of the third world in relation to advanced countries. I was also teaching that. I did a course in imperialism and dependency theory, which is intellectually a very interesting subject but it doesn't immediately produce direct applicable policy-oriented results. In a sense developmental economics is those two different things, and I was dabbling in both.

It's very difficult to know what to teach if you're teaching a course in planning, because there's a long literature in planning which makes assumptions that governments in third world countries have a relative kind of autonomy in deciding what to do about long-term economic policy, and that it's rational to think in terms of designing long-term economic plans of five years or ten years. It's that assumption which is violated. It's very difficult to find planning literature which takes account of the fact that most governments are planning for as little as a week. That's all the objective situation permits them to do. So I find it a rather difficult course to teach. In the end I taught it as a history of planning in the socialist countries. We looked at the history of planning in the Soviet Union and China and the issues which cropped up in that, which of course are the same issues which are going to crop up in a country like Nicaragua, but a country like Nicaragua is in no position to sit down and produce a five-year plan. They do have a long-term perspective plan, but even the people who are involved in compiling it know perfectly well that the assumptions on which it's based are not going to rule in the time span that it's designed for. That makes life difficult.

SfN: Are the people who take this planning course going to become planners?

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SfN Starts 3rd Year with 3 New Instructors

Another academic year has just begun, and three new SfN instructors have joined the five remaining from last year. Two were placed through SftP's agreement with the CNES (Nicaragua's National Council of Higher Education): **Robert Fox**, our first English teacher, who will be running the Technical English program at UNI (the National Engineering University); **James Febbo**, who will be teaching computer science (another first for SfN) at UNAN-Managua (the National Autonomous University of Nicaragua); his first report is included below. The third, Italian-born **Roberto Trippini**, formerly of the Cambridge SfN Committee, arranged his position through TecNICA, but has agreed to continue working with SftP in Nicaragua. Roberto, who will be teaching History of Mathematics and Philosophy of Science at UNAN-Managua, was the first to write to us:

Roberto Trippini: First Impressions

April 2, 1988

Thanks for the prompt reaction to my call for help. In a day full of charming coincidences, I first went to the TecNICA office and there I found a hardcover edition of Boyer's *History of Mathematics* sent by Robert Van Buskirk. I also found a message to the effect that a package for me had arrived at the Hospedaje Norma, where I promptly went and found the paperback edition of the same work sent by Michael Harris. But the day was not over, and later on I went to UNAN and found that a large number of math books had arrived at the department, and I was able to fish out 3 or 4 additional books on the history of mathematics (donations from Professor S. Zaslavsky of New York, sent by SftP last fall).

In this way, just a few days before classes were supposed to start, I acquired the needed bibliography. Previously, I had begged and borrowed from everyone, but I had only come up with Struik's *Concise History of Mathematics* (from Edgard Romero) and a small paperback on twentieth century mathematics (from Tim Brown). So I was able to put together fairly decent lectures, and I found that preparing a lecture on the socioeconomic bases of Ionian rationalism is a wonderful way to abstract oneself from political worries. I often think, though, that my own little contribution here—lecturing on philosophy of science and history of mathematics—is abstruse to the point of being surrealistic.

I came here thinking that while SfN is a worthwhile program, it was bound to be of mostly symbolical value because of its material limitations. Well, I no longer think that. SftP does make a real difference here. At UNAN, the mathematics department simply could not offer a degree program without Tim Brown, and that's no exaggeration: they make him teach the equivalent of four courses, including some of the most advanced, and have nobody else to teach those courses to fourth and fifth year students. At UNI, Robert Fox all by himself runs *the whole* of the Technical English

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SfN MONEY CRUNCH: PRICES TRIPLE FOR FOREIGN VOLUNTEERS

With the recent currency reform, Nicaraguan prices have increased 200-300% in dollar terms. Our operating costs in Nicaragua tripled overnight, and we need your help more than ever. See EMERGENCY APPEAL, p.7.

Update—Jennifer Strickler

During the interaño period (mid-January to mid-March) I am working on two projects.

(1) A course in social statistics which is given to the faculty of the School of Social Work. The faculty have virtually no understanding of the role of statistics in social research, so this is an introductory level course. Originally I had hopes of training one of the Nicaraguan professors to teach their two-semester statistics course, but that is clearly out of the question, due to lack of background and lack of time. Right now my objective is to give all of the faculty enough understanding of statistical techniques to enable them to advise fourth year student monographs on data analysis, a task which I am currently doing.

(2) Supervision of student practicums. All students in higher education are required to work in the field in order to gain practical experience. I am supervising six students who are working on a community development project in Ciudad Sandino, one of the barrios of Managua. Their task is to design a questionnaire to analyze the current level of community development (health care, sanitation, education, housing, etc.) and train residents of the barrios to conduct the survey. This project is coordinated by the Sandinista Defense Committees (CDS) and UNICEF.

In addition to this work at the UCA, I am doing solidarity work with a group called MIREN (International Women Residing in Nicaragua). We are raising money for two women's education and training programs—one in Managua and one in Puerto Cabezas on the Atlantic Coast. We are also sending informational material about the position of women in Nicaragua to North America and Europe, as there is very little understanding of women's situation and the women's movement here. I think it's important for cooperants to continue doing political work in addition to providing technical support in our jobs.

Update—Tim Brown

April 6, 1988

Saludos Compañeros,

I'm currently teaching three courses and overseeing two projects for the Department of Mathematics at the UNAN-Managua. I'm teaching Real Analysis and Complex Variables to fourth-year mathematics majors and Numerical Methods to fifth-year majors. The real analysis and complex variables actually resemble typical graduate courses taught in the States, usually too abstract for students at this level. (Indeed, their entire "*licenciatura*" program is quite ambitious.) However, if I'm able at least to maintain an analytic approach, they should be able to get something out of the courses, if not learn how to think mathematically. Numerical methods is a special topics course specifically geared to the "*monografía*" which these students must complete by the end of the year. We are learning some computer routines from a Numerical Recipes book put out by Cambridge University Press, and intend to modify the driver program which would, in turn, facilitate a practical application. We have in mind solving a PDE by simultaneous over-relaxation and ADI methods or evaluating efficiency of these methods relative to more standard ones by comparison of known results.

The projects are actually "*prácticas de producción*," which were postponed due to a reevaluation. They also require computer time and are being carried out by the third and fifth year mathematics students. A folleto has been developed by Steve Kosciuk of the University of Wisconsin, to provide students at this level a better sense of linear algebra using more intuitive geometric means. The other project involves Exploring Calculus, an interactive calculus program developed at the University of Rhode Island (cf. *SfN Newsletter*, Vol II, No. 1). Both projects are running smoothly so far and we don't anticipate any conflicts in PC time, thanks to a UNESCO grant which finally came through

and which will provide us with nearly three times our current capacity.

As for next semester, I am scheduled for a similar load, pending external cooperation. We are in dire need of qualified personnel to teach the upper level mathematics courses, from Calculus IV on up, now that the program is reaching maturity. The computer science program is just completing its third year, and will soon run into similar problems. Moreover, since computer science seems to generate the most interest, we're anticipating difficulty meeting demand at the base as well. Of the 100 openings slated for the current rotation of computer science majors, 120 have been filled! (no mistake!)

To end on a sad note, this past March, Nicaragua lost Rafael Sánchez Richardson, whom many considered the country's finest mathematician. A well-qualified professional, his absence is already being felt. He will be remembered for founding the department and for his tremendous patience and flexibility in adopting several improvement measures we internationalists had offered, at times overwhelming him with our arrogance. (*Lic. Rafael Sánchez Richardson was co-author of a report which appeared in Vol I, No. 3 of the SfN Newsletter*).

CHAO,

Tim Brown

Update—Tom Jackson

March 28, 1988

A student I'm advising for his monografía works for INAA (*the Nicaraguan water and sewer authority*, Ed.). He's working on a design for the water supply of the small town of Rio Grande in Region II. We head out there on the 7th, 8th, and 9th of April for field surveys and well inspection. There's \$50,000 to build the project, so the dam we're looking at is probably unfeasible, and our other alternative—a well—will go through.

I'm teaching a course in the environmental engineering department starting the end of April. This course is on sanitary and storm sewers: eleven eight-hour sessions! Because it is impossible to talk eight hours at a stretch, we will have in-class exercises each day. With INAA's Gregorio Herrera, I have gotten topography and street plans of Estelí and Bluefields to have the students divide the cities into drainage districts. Using population densities projected for 2010, they'll calculate sewer flows. Then we will go on to design the trunk lines in plan and profile and, for Bluefields, talk about solving tricky topographic problems with inverted siphons. Preparing this course has brought me into much closer contact with the design department and management at INAA.

I sat on the committee to judge a *monografía* of two students who did a preliminary design for a sewer system for Ciudad Sandino, west of Managua. INAA is presently running contours on their suggested route. The monografía was very practical but they did not have a good grasp of theory. I gave them an 80 which, with the others came to 84, more than sufficient to obtain their diplomas. Reviewing their monografía, I came across the guidelines for sewer planning for Managua, written by Gannett Fleming, a company for which I worked two years. I plan to write the branch president in Baltimore to tell him what's going on...

The fifth year course in *Obras Hidráulicas* has started. I have nine students. This is a day class and the difference between this group and last year's night class is like, well, night and day. Highly motivated and with time to study! I gave an assignment for Holy Week and not one groan in the room.

I had a follow-up meeting on recruiting engineers for INAA March 23rd. G. Herrera and two other administrators were there. We will have a detailed list of their ongoing projects coming soon, but here's a summary:

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Physicist Helps Nicaraguan Students to Design Solar Oven

Physicist Bill Lankford, of George Mason University, has been teaching in the physics department of UNAN-Managua since the spring of 1987. Bill arranged his own visit, with only a little help from SfN. This description of his participation in the

Jornada Universitaria de Desarrollo Científico (JUDC) is taken from a letter we received from him in February, during a brief visit to the U.S. More information on the JUDC can be found in Volume 18, No. 2 of *Science for the People* magazine, available for \$3.00 from *Science for the People*, 897 Main St., Cambridge, MA 02139.

There is something in each of the four universities of Nicaragua called the *Jornada Universitaria de Desarrollo Científico*, or university scientific development project. It's designed to involve university research and development in helping solve the real problems of the country. The projects range from sophisticated biological studies to applied electronics development. It's one of many efforts to integrate the university into the [revolutionary] "process."

Even though this was voluntary, all five students who began the second semester of my introductory course participated. Our project was to design a solar oven; perhaps the students were more interested in eating the food we cooked than in learning the operation of the oven. The high point was the day all the projects were presented in the university auditorium by the students. They had written a report and had been practicing their fifteen-minute presentation for days. Each student had three minutes to explain one aspect of their project. Two were very shy and it was their first time speaking in public.

The sky was clear and the sun scorchingly hot. We put a cake in the oven to cook and waited our turn. If the students still have some physics to learn they proved they were already masters of public relations. They gave excellent talks, including an impromptu fill-in for one of the shy ones who didn't show, and then at the end of the questioning one stepped up and said, "Now we'd like to show you how well our oven works." By then it was

lunch time and the oven door had been opened and the aroma of the freshly baked cake had filled the hall. Without a pause Margarita served the three judges a big piece of chocolate cake and then shared the remainder with the audience. I guess I shouldn't have been surprised when later in the evening "The Efficiency of the Solar Oven" was awarded first prize in the School of Natural Sciences.

We went on to the national competition a few weeks later and this time all five students participated in the presentation. We came in third behind a couple of excellent fifth-year projects from León, but *Nuevo Diario*, the independent, pro-government newspaper, published a good article on the project with a photo and quotes from each of the students. I'm encouraged about this as a way to lessen the demand for scarce firewood.

The next step in the project is to see how well the ovens are received in the countryside and in the poor communities of Managua. I've left three ovens to be used in homes and work places to try to get some feedback. When I get back to Nicaragua, I hope to set up some shops to teach Nicaraguans how to make them in larger quantities. Three students at the UNAN are already interested in going into business with it.

One thing about life in Nicaragua is that politics are never far away. An incident occurred this fall that points up the great difference between George Mason and UNAN. It was two days before the Sandinistas had called a rally to celebrate the Nicaraguan enactment of the Guatemala peace accords and there were excited preparations underway. I had just come back from buying an armful of wooden strips for the new solar oven we were making in the school shop. I dropped the strips on the table in my classroom and went to lunch. When I got back, there was the physics chairman delightedly picking out strips to use for banner poles he and the students were making for the rally. "You can't use those, they're for my solar research project," I said with mock indignation. As with most "conflicts" in the country, we compromised; he got some banner poles and I got enough to finish the oven. Somewhere among the 70-90,000 people who demonstrated in front of the National Palace that day were my wooden strips, holding up the physics department banner.



Lankford, his students, and the prize-winning oven (photo by Jeff Woodside)

SUTCLIFFE, *continued from p. 1*

R.S. This planning course was part of the sociology course in general. A lot of the people who took this course, third year students, were already or will soon be working in government ministries. About a third of the course was devoted to studying Nicaraguan planning. In Nicaragua, the planning secretariat produces a written plan every year. There's a book called *The Economic Plan 1987*, which is in a way more of a description and a bit of an analysis of the economy than it is a plan with objectives which are supposed to be fulfilled. It's a description with a few predictions about what might happen. All the people in the planning ministry said before it was even published that it was a long time out of date. It's a document which might produce useful and interesting ideas during its production, but it's not a document which in any way determines what happens in the Nicaraguan economy. Planning hasn't yet got to that stage.

But—since planning is much broader than writing plans—then a lot of these students would be in some way or other planners. They will go and work in ministries as economists or statisticians or sociologists, for example.

Perhaps half of the students in our faculty in UCA were working as well as studying. The university is designed to accommodate people who have full-time jobs as well as studying. Classes don't begin until 4:00 in the afternoon and they go until 9:00 at night. Which makes being a student who also works an incredibly difficult life. You go to work at 7:00 in the morning, or even earlier because of transport problems. And you'll get home at 10:00 at night, exhausted. Often you arrive at class, for five hours of continuous class, without having eaten dinner, you feel tired, and it's very hot. It's a very difficult life, and I was very impressed at the way people managed to keep it up, given that they have all kinds of material problems to cope with as well. A lot of them have families, and the problems of shopping, which is not an idle thing. You may have to spend a lot of time buying enough simply to live on at a basic level, at prices you can afford. So you have to go to this market or that market, or if your turn comes up to buy something special, like a pair of shoes, it would be foolish to turn it down, because you're not going to get another opportunity. So it makes sense to go and stand in a line all day waiting for your pair of shoes.

That's why planning is very difficult in the more mundane sense of the term in Nicaragua. Nothing, to exaggerate only slightly, ever goes according to plan. You find that everything is planned at the last possible moment. Some people, including some people on StP's scheme, find this extremely difficult to cope with psychologically. I mean, you fix a meeting, you put it in your diary, and as far as you're concerned, you're going to do it. In Nicaragua, if you don't confirm a meeting on the day it's supposed to happen, there's no chance whatever it's going to happen. In a way, this is like economic planning. Personal planning becomes exactly the same. You make long-term plans but they don't actually mean anything. In the end, on the day, you decide what to do on that particular day.

It arises from this general material problem. You'd be crazy to plan your life a week ahead. Who knows what your situation is going to be materially in a week's time? You may just have to do something else.

So teaching a planning course in a situation in which long-term planning is unthinkable, it becomes a bit difficult to know what to do. We had an interesting course. I enjoyed it and the students enjoyed it. But I'm not quite sure, thinking back on it, whether it was completely tuned into what was needed for Nicaragua. The other way in which it was related to Nicaraguan planning was that a couple of people from the planning ministry came to speak to the course. One person who came from the ministry was very straightforward and honest; he was extremely

realistic about what planning actually meant at that particular time.

There's one sense in which you can say that there's a real need immediately for planning. Not for long-term planning, but in terms of coordination, because the way the policy is made by one ministry immediately contradicts the policy which is being made simultaneously by another ministry. This again is not a special Nicaraguan problem, it exists in the United States, but when your resources are so scarce, then to have policies being implemented which contradict each other is a very dangerous thing. The government realizes that, and as a result of that they've upgraded the planning ministry, which used to be one ministry among others, and is now no longer called a ministry, it's called a secretariat, part of the president's office, and has the authority of the presidency behind it. This is supposed to make it in some sense above all the ministries, and all the ministries are now supposed to have a little planning module inside them which directly relates to the overall planning secretariat. Which seems to be a sensible idea in principle; it may be hard to get it to work, because of problems of administration and inexperience. But it's being implemented in order to strengthen planning as coordination, making policies consistent with each other.

SfN: Could you say a little more about the relation between what you taught in the planning course and what planners are actually doing?

R.S. Well, there was some relation, but it was difficult to find literature that really related it. In retrospect, I would have liked to have made it more of a course involving active participation of people who are involved in the planning process. But that's very difficult to plan... It was always very difficult to get the people to agree to a day when they might come to class. To some extent I gave up on that one. But that meant we were thrown back on the literature, and the literature was not terribly adequate.

That was the problem in teaching I found most acute, the terrible absence of books and journals. You really come to value a photocopier in those circumstances, and it was extremely difficult, for reasons I don't completely understand, to get photocopies. There are lots of photocopying shops in Managua, but there's a problem about price which is a complete mystery to me. When I arrived, the price of a photocopied sheet was the equivalent of 2 or 3 cents. Suddenly, in the middle of the time I was there, in July, it leapt up, in one great leap, to about 12 cents a page. It meant the difference between the ability to finance photocopying of a handout for a whole class of 50 people, and not being able to do so. I don't know why that happened, because on the whole those things tend to relate more or less to U.S. prices.

We had photocopiers in the university, but they were always short of paper, or toner or something like that. We had this wonderful photocopying machine, and everybody thought it would answer all their problems, and in the end it didn't, of course, because they needed lots of dollars for paper and toner, especially toner. And then there would be debates about the morality if you had a bottle of toner of keeping it to yourself rather than handing it over to the authorities just in case the time came when you needed it.

SfN: How did our program relate to your work, and how could we do our work together?

R.S. In my case the program didn't actually get me the job, because I'd arranged that independently. But for the others it did, so in that sense the program is important, because they wouldn't be there, they wouldn't have been recruited.

To some of them the program is important because it provides some sort of resources. It was a bit unfortunate that of the people

there, some were getting support from the program, some were getting financial support from outside the program which had been somehow organized in conjunction with the program, and some were getting no financial support from anywhere. I don't think that was a huge problem, but it contributed to the people there in the program maybe being less cohesive as a program than they may otherwise have been, because their relation from the material point of view was so different.

That leads me to the last point, which is important if SfN is going to work as a program, rather than a way for a number of individuals getting there and staying as individuals, which we've done. That would be to have a really good resources backup system. I know you've started this with your monthly book parcels and toner parcels. There are lots of things which, if there had been a regular arrival of something that was efficient and well-organized and if there had been regular information on what was needed, that could have been supplied which would have helped us in our job. I mentioned toner and photocopying paper. The most difficult thing is books and articles, and it's my opinion that the only books and articles that are of any use really, except in really exceptional cases, are ones in Spanish. In terms of backup to teaching, my great lack, and that of a lot of people, was of Spanish-language books. It implies the need for the program to link up with something or other in a Spanish-speaking country, or going to bookstores in this country. If you had somebody who is able to have access to buying Spanish language books or photocopying Spanish-language articles that would make a huge difference...possibly photocopying on a large scale at relatively short notice.

The program can do a useful job just sending people there and make them be individuals, but it doesn't become a program...and it would be very good if it were, because it would make more of an impact, and there would be benefits both here and there.

SfN: Is the program perceived as just a small bunch of people from the U.S., or is it perceived as a whole, a substantial influence on Nicaraguan higher education?

R.S. It wouldn't be realistic to think that it's yet perceived as a major influence because the number of people is still very small. And they've tended to go as individuals to different departments, and there hasn't been consistency in sending people to the university year after year. So it will take some time before it can be perceived in general as a program. As far as I know all the people who have been on it have at least satisfactory reports on their work and they've done a useful job. In that sense I presume that the CNES will by now have established a good opinion of it in general. But you should judge that by your communications with them. For example, are they asking for people? I suspect that they're not. What's happening at the moment is that the program is going down and saying, we have these people who are applying, can you fit them in somewhere? The ideal situation would be that they are phoning you up and saying "We're desperately short of X for a course in Y." [SfN: UNI is doing this] Well in that case that's good, that's exactly what the program should do.

SfN: What do the Nicaraguans think about instructors from the U.S.?

R.S. There's a certain amount of ideological skepticism. Not as you might expect because they think somebody coming from North America is an imperialist, they're perfectly aware that anybody who comes to teach in Nicaragua is in solidarity in some sense with the Nicaraguan revolution. It's rather that they often expect us as foreigners to be very naive about Nicaragua, and a bit

in the spirit of solidarity without really knowing very much.

The other thing which happens is the language problem. It quite often happens that foreign teachers are difficult to understand and many of them have hard problems in fitting in to classroom situations. There's a certain skepticism there on the basis of students' past experience which all of us expect when we go there as a foreigner and stand in front of them for the first time, they're not automatically going to think that we're going to do them very much good. So we have to try harder.

It always seems to me important to stress that the international community do their "expert work" in a context where they're politically answerable to somebody. I've become more and more skeptical about the idea of experts, as such, separated from some kind of political context, especially in the social sciences. There's not all that much that an economist is an expert on that is separate from being an expert politician, an expert interpreter of human needs. The extent to which economic technique is necessary is relatively limited.

It leads up to the traditional idea of the universities as a very elitist institution. To a limited extent that is different in Nicaragua. I still felt, teaching in Nicaragua, that there is too much of the idea built into both students and teachers that the teacher knows and tells, and the students learn and receive.

SfN: Was this true in the classes you gave?

R.S. Yes, much more than I would have liked. It was a quite conservative tradition in education that survived, of university education being a creation of experts, rather than universities being a part of a political community, whose needs they serve. It's variable, the universities are much more politicized there than here, at least in relation to the government, which as a revolutionary government, demands that the universities perform certain functions in relation to the society. Also, the students are relatively well organized, they have a lot of assemblies to discuss the usefulness of courses and make their complaints. On the whole, this works better than here. But the old idea that the students are just supposed to repeat what the teachers said is still very strong, although this is breaking down to some extent.

The other thing, this is going off on a tangent. I said that the universities are much more politicized, but the students are not politically very active, at least at the moment. You couldn't say that the students are kind of a separate political force in Nicaragua.

SfN: Do you see a future for programs like SfN?

One aspect of dependency, which to me is very important, is that you depend all the time on outside assistance from states. Normally states are rather conservative and bureaucratic institutions, and it seems to me that Nicaragua would benefit in many ways if the nature of outside assistance could be changed from states to voluntary and more progressive organizations. There's a huge literature about how a lot of so-called foreign assistance is not foreign assistance to development, just a way of tying countries in to a continued form of dependence. In that sense, a program which is not attached to a state, but which is able to tap the kind of scientific and technical resources within the state could be actually very important. So a program which can tap the cultural and material resources of part of the scientific community, in a very advanced country like the United States, without transmitting them through the imperialist state of the United States, is very important. If you look around the world at development projects, the best ones are the ones which are not routed through states, so they're not a part of foreign policy of states, but are actually more specifically related to development needs.

Annual Review of Nicaraguan Sociology

The first issue of Annual Review of Nicaraguan Sociology, announced in our last newsletter, has appeared. We reprint here an abridgment of the Editors' Introduction, which explains the goals of this important new publication. Subscriptions may be obtained by writing the Institute of Human Relations, Box 12, Loyola University, New Orleans, LA 70118; rates are \$25.00/year for individuals, \$35.00/year for institutions.

"With this first issue the *Annual Review of Nicaraguan Sociology* makes available a body of theory and research not previously available in the country. This is a journal whose primary purpose is to present work done in Nicaragua by those who have been active in applying sociology to the incredible social change machine that is the Nicaraguan Revolution. Many of the authors are social scientists who are forced, through necessity brought about by Nicaragua's long struggle for liberation, to wear many different hats: teacher, thinker, planner—even soldier. The difficulty of accomplishing these many tasks makes even more impressive the quality of the work represented in the articles published here.

"We chose to examine the 'state of sociology in Nicaragua today' in the first section of this issue in order to try to convey the devastating effects left on the social sciences by underdevelopment, and to show how the social sciences are able to contribute to the development of a new Nicaragua. The piece by Nicaraguan Vice-President Sergio Ramírez eloquently delivers the vision of the social sciences held by the revolutionary government. Meanwhile, Amalia Chamorro [*Director of the School of Sociology of the UCA, Ed.*] explains the difficulties encountered by academics facing a situation in which the great majority of the faculty has been pulled away from the university by the urgent tasks of nation-building.

"What may be of particular interest to readers in the United States or Europe is the contemporary manner in which theoretical/critical questions are addressed. Many of the articles herein...offer not only the traditional praxis of Marxist critical analysis, but also echo some of the more recent kinds of questions, issues, and concerns of Critical Theory and contemporary French thought. That is to say that these essays are not political polemics whose purpose is to *explain away* the problems in a politicized society; rather, they are a sensitive and informed thinking-through of political, social, and economic problems from *within* a revolutionary society in transition.

"Because economic transformation is inseparably linked to social transformation, particularly given the mixed model being implemented in Nicaragua, several articles dealing with the transition economy have been included... Finally, we have included a section in which the important issue of the role of religion in the revolutionary context is debated by two of the leading social scientists in Nicaragua.... This debate will serve as an excellent guide for U.S. academics to some of the major issues facing this significant aspect of Central American social discourse."

Positions for Agricultural Experts

The New World Agriculture Group (NWAG) seeks professors on sabbatical, graduate students looking for doctoral thesis work, or technicians looking for work in a politically progressive third world country, in areas including: genetic improvement and seed production of soybean, sunflower, and sorghum; Integrated Pest Management; production of bacterial inoculum; insect taxonomy; plant tissue culture (mainly sugar); agronomic practices in vegetable production; and weed control, insect control, and soil management in paddy rice production. For further information, contact John Vandermeer, Department of Biology, University of Michigan, Ann Arbor, MI 48109, Telephone (313) 764-1446.

NEW INSTRUCTORS, *continued from p. 1*

program, besides teaching huge classes himself; also at UNI, Tom Jackson works from dawn to dusk giving absolutely crucial courses to key engineering students. A lot of important things would stop happening if SftP were not operating here. It is important that you people in Cambridge and Berkeley realize that even those few cooperants you can recruit and send down here may have a big role to play.

This week is Holy Week and nobody is left in Managua except a few odd gringos typing on old Olivettis in dusty patios and cursing nearly inkless ribbons. I have stumbled across some of the stuff I wrote up in Cambridge some time ago. I howled with laughter, scaring away the poor iguana who lives on my roof. One really has to know the local conditions before planning anything. It has been only after a while here that I have been able to figure out why nobody—absolutely nobody—ever uses the phrase "Science for Nicaragua." We are all Science for the People and are so referred to by gringos and Nicas alike. The reason: SftN sounds bureaucratic, while *Ciencia para el Pueblo* really fits in with the Nicaraguan political rhetoric. There may not be much science here, but the people are not lacking. Of course, often one has to explain to Nicas that SftP is not quite "*una organización de masas*" [mass organization, ed.], comparable to the Sandinista labor federation or AMNLAE [Sandinista womens association, ed.], and that we are just "*una organización de cuadros*" (an activist organization, ed.).

First Impressions—Jim Febbo

I am living in the same barrio as Tim Brown, with a family, and I'm hoping this will improve my Spanish as well as reduce my expenses. [*Apparently he's moved since this letter was written, Ed.*] The university (UNAN-Managua, Recinto Rubén Darío) is about four miles from here. You can get there by taking two buses or by one bus ride and a longish walk. The buses are overcrowded, of course, so it's often faster just to walk. I mention this because whoever is astute enough to bring a bicycle will be far ahead here in all respects. I hope to find a used one someday, priced slightly less than a Porsche.

Tim Brown and I are both in the Mathematics/Computer Science Department at UNAN. They have 8 or 10 PCs and they're supposed to get a minicomputer from Cuba soon. We don't know much about it yet, but construction of an air-conditioned room with raised floor is under way.

I share an office which is quite comfortable, and I was lucky enough to be assigned the second half of a Data Structures course. Coming in halfway through a course means that the textbooks were already chosen and available—not everyone has it so easy. Office supplies are very short, but they seem to have bare essentials.

It looks like I will really be needing that \$50/month support money since, among other things, the prices here really gave me a shock. As I understand it, the country recently underwent a monetary reform, putting an end to black market trading and establishing a very steep rate of exchange against the dollar. Now prices here are like downtown Manhattan for foreigners.

To give you an idea of the impact of the monetary reform, the start of classes for this semester was delayed for one full week for that reason. So there is one more week for me to prepare. Life here is fairly rugged for everyone. Besides the material shortages, electricity and water services are available only a few hours a day. And it's a lot hotter without water.

But there's a lot of spirit in the place. You can feel it, you can see it. And in the hospedaje you can talk about it with the countless brigadistas who come from all parts of the world to help in the harvests.

Jim Febbo

JACKSON, *continued from p. 2*

* They are very interested in geohydrologists. Managua's main water supply will be augmented for the next few years chiefly by ground water. They talk about pumping from Lake Nicaragua (*not* Lake Managua), but even though I'm working on a feasibility study at Tecnoplan which includes a ± 40 km 72" line to INAA, I don't foresee that as an imminent possibility. So it's groundwater. They have geophysical equipment—an electric resistance outfit. They have Bucyrus-Erie Cable tool rigs and a direct circulation system for wet drilling. A big interest for research is the extent of hydraulic connection between Lake Managua (highly polluted) and Lake Asososca, the city water supply. At present Asososca is at a higher level. If it is lowered and the gradient reverses...

* They are also interested in developing a computer model of the water supply system, describing it with a network model and then optimizing the system. They have some microcomputers and an old IBM mainframe. This is not amateur's work either. Better get some old-timer. Not too old—s/he's got to know computers—but with 15 years of city water supply under the belt. Six months or one year.

* They also need younger engineers to work on the staff, with pretty good Spanish and ready to work. Nicaraguan salary—say 5000 cordobas a month. Car and house not likely.

* There are about 400 pumps of all sizes and makes in the Nicaraguan water supply system. What is needed is an inventory and maintenance plan. An engineer, or better, a skilled mechanic, is needed to head this program. Electro-mechanical systems are the key here. They have a machine shop, hydraulic presses, welders, etc. for maintenance. A mechanic would be awarded engineer status. Travel to all of Nicaragua. I'd say this job slot is the most important one we could fill.

West Coast Expands Material Aid Efforts

by Robert Van Buskirk

West Coast SfP has joined forces with the UC Berkeley student Recycling Project in order to send half of a shipping container of material supplies to Nicaragua's universities next fall. The ASUC (Associated Students of UC) Recycling Project collects newsprint, ledger paper, glass, aluminum, and other materials, in an effort to increase the proportion of recycled waste at UCB and the associated Lawrence Berkeley Labs. There are collection barrels

for these materials in most buildings, which are emptied during weekly pick-ups. A portion of the collected materials are not only recyclable, but reusable: manila folders that can be relabelled and reused, envelopes that are blank but for an outdated return address, binders, and small amounts of blank paper. In the course of regular operations, 50 boxes (100 cubic feet) of such materials have been collected in the past few months. There is also an effectively unlimited supply of one-sided Xerox paper.

In the next few months the Recycling Center and SfP will attempt to tap this new source of material aid by expanding the collection of reusables, soliciting donations of new supplies, and expanding the regular book collection campaign (Books for Peace) to include all kinds of educational supplies. With a concerted effort, we believe we can collect 1500 cubic feet of supplies by December. The Recycling Center provides an excellent logistical infrastructure for these efforts. Their warehouse provides storage for the materials, their truck can provide transportation, while their regular recycling pick-ups can also pick up on-campus donations of laboratory and other supplies. We hope that with our new efforts, we will not only take care of some bibliographic needs of a few specific departments [*cf. letter from UNI, p.8*], but also help ease some of the severe day-to-day shortages of basic supplies that exist throughout the university.

If you live near Berkeley and can donate a few boxes of paper, binders, technical books, lab equipment, other educational supplies or an old manual typewriter to the Material Aid Drive, call Robert @415-652-6361 to arrange for pick-up.

Science for Nicaragua Newsletter is produced six times a year by the Nicaragua Committee of Science for the People, and is distributed free of charge to members of the Science for the People organization. Tax-deductible contributions should be made payable to Science Resource Center.

This issue was produced by Michael Harris and Gary Keenan.

SfN chapters:

897 Main St., Cambridge, MA 02139 (617)-547-0370 ;

3217 College Ave., Berkeley, CA 94705 (415)-652-6361;

c/o Miriam Struck, 9311 Sudbury Rd., Silver Spring, MD 20901

(for literature donations);

CONIPCIT, c/o Prof. Víctor E. López-Tosado,

De Diego 444, Apt. 1402, Rio Piedras, Puerto Rico 00923

...EMERGENCY APPEAL...

SfN is now supporting the work of 10 instructors and engineers in Nicaragua. This support is only possible thanks to your contributions. Like other organizations working in Nicaragua, the recent currency reform has hit us hard. We don't want to be forced to cut back any of our essential work. Your generosity at this time is crucial.

Enclosed is my tax-deductible contribution of \$ ___ to keep SfN instructors in Nicaragua.

I want to subscribe to *SfN Newsletter*. Enclosed is \$10 for a one-year subscription.

Name: _____

Affiliation: _____

Address: _____

Tax-deductible contributions should be made out to
Science Resource Center
897 Main St.
Cambridge, MA 02139

We recently received the following letter from the Director of the UNI's school of Chemical Engineering. Chemical engineers interested in working in support of their Nicaraguan counterparts are urged to write SftP's office in Cambridge or Berkeley.



UNIVERSIDAD NACIONAL DE INGENIERIA

March 1, 1988

Science for the People
c/o Robert Van Buskirk
3217 College Ave.
Berkeley, CA 94705 USA

Gentlemen:

During the past years, the staff of the School of Chemical Engineering has continually been in need of textbooks and professional literature for the further development of our university. In this situation, the donation of books from American citizens, through your organization, has helped to satisfy this need.

The purpose of this letter is to express our gratitude to all Americans who, in some way and by any means, have shown solidarity with the Nicaraguan people.

It has been our goal, since the founding of this university in 1985, to improve chemical engineering education. This effort can be enhanced by establishing close relations between the School of Chemical Engineering at UNI and Chemical Engineering departments at American universities.

We believe that your organization could be very helpful in this endeavor, and we request your assistance in establishing relations with American chemical engineers.

We are grateful for your solidarity, and we look forward to your reply.

Sincerely,

Norvin Torres M.
Director
School of Chemical Engineering



Science Resource Center
897 Main Street
Cambridge, MA 02139



Cooperation in Scientific Education
with Nicaragua

Help Improve the Newsletter's Looks!

It's time to do something about the long uninterrupted columns, the monotonous typeface, the uninspired front page. The Cambridge SfN Committee is looking for volunteers with experience in graphic design, or simply with a little imagination, to improve this newsletter's visual appeal. Access to a Macintosh is helpful but not essential. Call Gary Keenan at the SftP office (617-547-0370) for more information.

We can also use photos, articles, and letters to the editor from anywhere in the country. And it wouldn't hurt the newsletter to have a less pedestrian name. Suggestions, comments, articles, photos, and letters should be sent to the Cambridge SftP office (address p. 7).

Volunteers Needed for Woods Hole Program

SfN is planning to make several presentations this summer at the Woods Hole Marine Biological Laboratories. Newsletter readers who plan to visit the MBL, or readers from New England, are encouraged to help organize our program. Please write us at the Cambridge SftP office (address p. 7).

VETERANS PEACE CONVOY

On May 21, 100 U.S. veterans driving 50 trucks began crossing the country to collect food, medicine, and clothing for Nicaraguan children. The goods will be driven to Nicaragua later this summer. We urge you to welcome the peace convoy when it arrives in your community.

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