

Science for Nicaragua Newsletter

Produced by the Nicaragua Committee of Science for the People

Volume 1, No. 5

September-October 1987

Peace in 1987?

by Michael Harris

For the first time during Reagan's presidency, there is sustained movement toward a political solution to the conflicts in Central America. It is likely that this article will be out of date by the time our readers begin to receive this newsletter, three weeks after it goes to press. Nevertheless, it is possible to discern some of the forces at work in the process that led to the August 7 signing of a peace treaty in Guatemala by the five Central American presidents.

The treaty is unquestionably a defeat for Reagan's policy in Central America, and is one of the clearest indications to date of the weakness of the Reagan administration in the wake of the Iran-Contra scandals. Days before the Guatemala meeting, senior administration officials were openly admitting that the Reagan peace proposal, drafted jointly with House Speaker Jim Wright, was expressly designed to be rejected by Nicaragua, thus paving the way for renewed congressional funding of the contras. Insult was added to injury when Wright himself announced that the Guatemala treaty now took precedence over the Reagan plan.

How did things get to this point? The first peace plan of Costa Rican President Oscar Arias, introduced in late 1986 as an alternative to the stalled Contadora negotiations, fit squarely in the framework of Reagan's program to unite the other four Central American countries against Nicaragua. Negotiation with the contras and the immediate holding of new national elections, concessions repeatedly refused by the Sandinista government, were posed as preconditions for an end to the contra war. The first Arias plan met with the full support of the Reagan administration and its allies in the region, El Salvador and Honduras. These two countries, together with Costa Rica and Guatemala, were scheduled to meet February 15 in the Costa Rican capital, San José, in a summit from which Nicaragua was pointedly excluded.

But the plan that came out of the San José meeting was very different from the one that went in. Guatemalan President Vinicio Cerezo, fearful of the consequences of the expanding Central American war for the economic and political stability of his country, refused to be drawn into an alliance against Nicaragua. The July 1987 issue of *Envío*, a monthly magazine of political analysis published by Jesuits in Nicaragua, detects another influence:

"[The San José meeting] coincided with a trip through Central America by Democratic Senator Christopher Dodd. All speculation about the visit points to the conclusion that Dodd explained to the Central American leaders what a Democratic Party policy would be with regard for Nicaragua, based on an end to contra aid and on containment of the Sandinista revolution through political, economic, and diplomatic means, rather than military means.

"As a result of Dodd's visit, the Arias plan underwent a transformation in San José to become the Arias plan we now know, which states as a first and fundamental measure that the Central American governments should ask the United States to

continued on p. 5

IN THIS SPECIAL 6-PAGE ISSUE:

Congress restricts travel to Nicaragua	p. 2
Linking early science education in the U.S. and Nicaragua	p. 3
Nicaraguan mental health care	p. 4
New Washington chapter to take over journal donations	p. 4
Needs of Nicaraguan higher education	p. 5
Five new instructors arrive in Managua	p. 6

Higher Education in Nicaragua: Breaking with Tradition

by Manuel Toledo

University education began in Nicaragua nine years before the countries of Central America achieved independence from Spain, but has only been established relatively recently as a functioning system. An 1812 decree by the court of Cádiz declared the Seminary of San Ramón, located in the city of León, to be a university. This first university was closed and reopened several times, in response to a changing political scene, before in 1966 it was officially declared the Autonomous National University (UNAN).

Until the 1960's, the universities served two main purposes: to give a "cultured" image to the country, and to legitimize the minority of the economically privileged. This changed in 1960, when the country entered a new phase of economic development linked to the commercialization of coffee and cotton and the development of a dependent form of industrialization. Only 5% of the general population had finished elementary school by 1963, and the number of professionals satisfied only 19% of the demand.

To satisfy the new needs of the sector in power, the number of university majors increased from 9 to 20 between 1960 and 1969, and up to 36 by 1978. In the same period, the number of Centers of Higher Education grew to 11. The career programs offered by these Centers were directed toward the needs of the businessmen and not those of the population. Three quarters of the students were in business-oriented majors, and identical courses were offered at the majority of the Centers.

Since the Revolution

The transformation of the higher education system has been a top priority of the revolutionary government since it came to power in 1979. Reforms have been introduced with a view to making education into a factor for social transformation, prioritizing programs—like medicine, agricultural sciences, and technology—important for the development of the country, and

continued on p. 2

Ben Linder's Family to Visit Boston

The father, mother, and sister of slain engineer Benjamin Linder will be in Eastern Massachusetts between the 15th and 18th of October, the last leg of a nationwide tour which began last spring. The tour hopes to increase awareness in the U.S. of the contra war and to raise \$200,000 toward the completion of the hydroelectric project on which Ben was working when contras murdered him last April.

The Linder family visit will include a public meeting Thursday evening, October 15, at the Arlington St. Church, 351 Boylston St., in Boston, and a fundraising reception Sunday, October 18, at a location to be announced.

Science for the People is one of the principal sponsors of the Linder visit to Boston, and SftP staffer Gary Keenan has offered to serve as coordinator for the Eastern Mass. tour. Readers living in the Boston area are urged to help with the planning of the tour. To volunteer, call the SftP office at (617)-547-0370.

As mentioned in the last issue of the Newsletter, SftN instructor Jeff Woodside took part in a March for Peace in northern Nicaragua following Ben Linder's murder. His description of that march has been printed in the Sept.-Oct. issue of SftP magazine.

HIGHER EDUCATION, *continued from p. 1*

creating an attitude of social responsibility and consciousness among the new professionals.

To implement these changes, a new body was created on February 29, 1980, and was called the National Council of Higher Education (CNES). The first task of CNES was to transform the existing centers and majors to meet the country's immediate demand for skilled labor and technicians. This included the phasing out of low priority majors and the regrouping of centers, in order to make better use of Nicaragua's scarce resources.

Between 1979 and 1984 the number of university campuses was reduced from nine to four. Among the remaining four was a new National Engineering University (UNI), created in 1983. In the same period, the number of technical schools grew from 2 to 12; the number of university level majors increased from 56 to 72, and that of technical level majors from 25 to 38. A total of 25 majors, including such curiosities as Tourism, "Didactics," and Interior Decoration, were eliminated due to their low priority. Their place was taken by new majors like Nutrition and Industrial Engineering at the university level, and Agronomy, Zoology, Agricultural Mechanics, and 14 others at the technical level. By 1984 the enrollment in Agricultural Sciences was five times greater than in 1979; medical enrollment had tripled and that of technical majors had doubled.

Another change introduced in the new university system was the elimination of the "credit" system in favor of the system of semesters, in which the students are required to take a set number of courses per semester. Also, the curricula of many existing majors were revised to make them agree better with the needs of the students and those of the country. In 1982, a form of work-study, called "production practices," was introduced by law, requiring every student to work a number of hours per semester in an area related with his or her chosen profession.

Education during Wartime

The fast pace of changes, and in some cases, inexperience and excessive enthusiasm, have given rise to a number of problems. Many university departments, especially the new ones, are hampered by a serious lack of human resources. This has been solved to a large extent through international cooperation. For example, professors from 26 different countries taught at the UNI during 1986. A senior student is assigned to assist each foreign professor. After graduation, the student is expected to join the faculty and take over the courses previously taught by the foreigner.

The reforms have brought their share of negative side effects. The new semester system introduced some rigidity to the program of study, but is in general the most efficient way of using the available resources. "Production practices" have in many cases been difficult to coordinate with academic program. Furthermore, lack of experience and the absence of accurate descriptions of majors has made curriculum development something of a matter of trial-and-error, and has led to the proliferation of programs for students in different years of the same major.

Donations Help Meet Growing Needs

At UNI, the process has probably been more difficult than at universities that already had an infrastructure. In 1986, for example, there were simply not enough classrooms at the beginning of the academic year for all the courses. The problem was solved by painting blackboards in some of the corridors and using them for teaching! Additional rooms were built for the second semester.

There is also a severe shortage of experimental facilities. Chemical and Electrical Engineering labs are being built thanks to donations from universities in Sweden and the Netherlands. Europeans have also donated a small number of microcomputers, making the situation somewhat better than in 1986, when only three PCs were available for more than 600 students and faculty.

However limited the facilities are, the importance of combining theory and practice in a country with a tradition of dependence on foreign technology is generally recognized. Efforts to maximize the use of available equipment are emphasized by university administrations and faculty. Student input is limited by the need of most students to work full time in addition to studying, leaving little time for their participation in long-range planning.

Higher education in Nicaragua still faces the essential challenge of consolidating its transformation. Many of its problems are shared with other institutions in the society. There are problems of bureaucracy and lack of coordination in many of the ministries, making work less efficient and underlining a long-term danger. The bad habit of an elitist mentality is also present, both within the university system and in the society at large. The lack of resources and the multiple demands placed upon students in this emergency period seem to be the reason for poor academic performance and labor discipline.

These are all long-term, fundamental problems, and their roots lie in the current aggression and in a history of colonialism and dependence on an economic system primarily motivated by the maximization of profit.

Manuel Toledo taught electronic engineering at the UNI in 1986. This article is based on a speech at the annual SfiP fundraising reception in June 1987.

Congress Restricts Nicaragua Travel

With the recent passage by Congress of the so-called Walker Amendment, U.S. citizens are now forbidden to travel to Nicaragua "to perform services or provide assistance to the military operations of the Government of Nicaragua." The law contains similar restrictions on military assistance to "any group which the President has designated as a Communist guerrilla group or as a guerrilla group which receives assistance from the Soviet Union, Cuba, or Nicaragua."

The new law does not place our work in immediate jeopardy. It's hard to construe teaching mathematics, physiology, sociology, or engineering as "providing assistance to ...military operations." Nevertheless, we have no doubt that the FBI will be intensifying its surveillance of groups such as ours—surveillance which, in the case of the group TecNICA, has included visits to employers of returned volunteers—to make sure we're complying with the law.

Even under a restrictive definition of "assistance to military operations," the law is a bad precedent. The sponsors of the Walker Amendment have made it clear that their intention is to inhibit cooperation with Nicaragua. The law is preceded by a "Finding" stating that "...travel by United States citizens to Central America for the purpose of performing services or providing other assistance for the Government of Nicaragua or for Communist or Communist-supported guerrilla groups causes serious damage to the national security and foreign policy of the United States."

One would have preferred Congress to have spent the summer passing laws to restrict travel to Central America with the purpose of providing military assistance to guerrilla groups, like the *contras*, which have been found by the International Court of Justice to be in violation of international law, not to mention human rights. Or perhaps the Reagan Administration's treatment of the Boland Amendment has discouraged Congress from asserting its foreign policy prerogatives. We are not discouraged by the Walker Amendment. Our work, and the work of the other groups implicated in the "Finding," aims to promote development and peaceful cooperation between U.S. citizens and a country with which we have no reason to be at war. Such cooperation can only enhance our national security; and any damage to U.S. foreign policy can easily be remedied by bringing the policy into conformity with international law.

Linking Early Science Education in the U.S. and Nicaragua

by Henry Lowendorf
New Haven/León Sister City Project

About a year ago a small number of scientists, engineers, and secondary science and elementary school teachers organized a science education project between schools in New Haven, CT and León, Nicaragua. The purpose was both to improve the quality of early education in the sciences in the two cities and to tap the creativity and resources of interested individuals, moving them into the struggle to stop the U.S. war against Nicaragua, at least initially, by actively pursuing a humanitarian alternative.

The New Haven/León Sister City Project provides a framework for the Science Education Project with full-time coordinators both in New Haven and León, task forces in education, health care, religion, arts, construction, labor, and small business, and the promotion of many working tours of León and Nicaragua. More broadly, elected officials from the city of New Haven have extended their support and a majority of the Connecticut congressional delegation opposes Reagan's proxy war.

Science education is a priority for the Sandinista government. It is seen as necessary, for if Nicaragua is to extract itself from dependency, underdevelopment, and susceptibility to both internal and external exploitation, positions in medicine, dentistry, agriculture, engineering, and teaching must be competently filled.

Members of our project also recognize that, despite the technically advanced status of the United States, with the exception of a relatively small elite, citizens of our own country are largely scientifically illiterate. Fear of science is created early in our children within the educational system, and it is perpetuated by many teachers who have little, and mostly counterproductive, scientific training and who abandon careful observation, speculation, and experimentation, the burning embers of science, for recipes and memorization, which extinguish them.

Our purpose is to reverse the above approach in New Haven by developing projects that are valuable in themselves, more valuable when exchanged with our sister culture, that interweave with various other scholastic disciplines and require relatively few, inexpensive, easy-to-obtain materials. We are pulling together local talent—scientists, science educators, doctors, engineers, and skilled hobbyists—to work directly with teachers, encourage them to experiment, and ultimately to stimulate the children to explore and test alternative answers to scientific questions.

We have initially created some simple projects that require few resources other than pencil, paper, and the creativity of the participants. The projects capitalize on comparisons between the two cultures, climates, natural history, geography, and demographics to make the science exchange an enjoyable learning experience for students and teachers in the Sister Cities. For example, we have developed a project whereby elementary students adopt a tree to observe, measure, and draw its changes over the course of several seasons; another requires mapmaking of the respective cities, involving decisions about which important features to include, and perhaps mapping a route for travel between the two Sister Cities; we are setting up an amateur radio bridge to involve students and local ham operators. We hope to amend these projects with more experimental ones as our contacts with teachers grow deeper and both human and material resources become available.

In Nicaragua, most elementary and secondary school teachers have no more than a high school diploma. Imagine the difficulties that recent high school graduates face in stepping right back into a classroom as teacher. This situation results from a long history of educational underdevelopment by the Somoza regime followed after the revolution in 1979 by the urgent requirements of mass literacy. In trying to address this problem and also to alleviate the extreme geographic and economic unevenness that

existed in education before 1979, the Ministry of Education in Managua has created a rigid curriculum that fixes day-by-day lessons for each grade. Although this approach helps many inexperienced teachers who themselves have limited education, it obviously creates problems both for experienced teachers and for students who do not learn at the prescribed rate. Beyond this general dilemma, which affects all disciplines, the science curriculum faces even greater difficulties.

Science education requires facilities, materials, and scientifically literate teachers. In Nicaragua all are scarce. In the United States, it is possible to conceive that high school graduates with strong science backgrounds could teach elementary, possibly even secondary school science. Many have done laboratory experiments and all have grown up in a technical society. For Nicaragua, as for other underdeveloped lands, the above scenario fails. There is no built-in experience with technology for most of the population, which is overwhelmingly poor and primarily rural. And of course the science, if provided at all in elementary and secondary classrooms, is theoretical. The biology teacher in Lechequago, a rural settlement near León, recently told a New Haven delegation that she is supposed to teach theory and practice, but with no materials there is no practice.

Science education in Nicaragua stresses practicality. Two Facultades Preparatorias in Managua and León, projects of the Sandinistas, are special science and technical schools reserved for children from campesino and poor families. At "La Prepa" in León, handsome concrete buildings occupy a small campus on the outskirts of the city. The curriculum provides four main areas of study: medicine, dentistry, education, and agricultural science. Here, six years of classes are compressed into three and the 675 students receive full scholarships. To attract high quality teachers, La Prepa faculty have appointments at the University.

Helping La Prepa in León is a major goal for the Sister City Program. There are 6 science laboratories, two each for physics, chemistry, and biology, but all are as yet unfurnished. Indeed, the materials available for the chemistry courses in April 1987 consisted of one Erlenmeyer flask, one small beaker, and a handful of test tubes. One important priority at La Prepa is gardening. A several acre plot adjacent to the school will provide both needed food for the students and experience in agricultural science. Our Science Education group is helping to furnish the laboratories at La Prepa, provide science materials, books, and journals, develop science projects, and support the gardening program.

Beyond that we have developed contacts in science departments at the National University (UNAN) in León. We have been asked to provide some expertise in biotechnology, agriculture, and forestry, and have already sent lecturers in physics, mathematics, and statistics. We plan to work with faculty in the School of Educational Sciences at UNAN who are responsible for "professionalizing" the primary and secondary school teachers by providing extension courses. And we expect that scientists in León, as in New Haven, will offer their skills to the improvement of early science education.

The New Haven-León sister city project is located at 965 Quinnipiac Ave., New Haven, CT 06513.

Science for Nicaragua Newsletter is produced 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 Leslie Fraser.

SfN chapters:

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

1627 Euclid St., Berkeley, CA 94709 (415)-549-1233

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

Mental Health in Nicaragua

Leonard J. Friedman, M.D.

In January and July I visited Nicaragua and consulted with Nicaraguan psychiatrists and psychologists about psychiatry and family therapy. In July, Drs. Ignacio Maldonado and Pablo Herrera from the Latin American Institute of Family Studies in Mexico City and I taught a one week intensive course in family systems therapy for psychiatrists and psychologists in Managua, sponsored by the Nicaraguan Psychiatric Society. The course covered the basic theories of Minuchin, the Palo Alto group that formed around Bateson and Watzlawick, and the Milan group of Selvini-Pallazolli and Cecchin. Participants learned how to apply these theories to the diagnosis of family systems problems.

We used informal lectures, small group exercises, and videotapes showing actual family therapy sessions, including two that Minuchin made when he was in Mexico City. Work was done with a simulated couple during the seminar. Participants were enthusiastic about the course and are eager for the next courses, planned for November and February, which will cover therapeutic techniques. We were interviewed about the course for an article that appeared in the independent newspaper, *El Nuevo Diario*. Perhaps because of the resonance between the themes discussed and the social analysis going on in Nicaragua since the revolution, the seminar group assimilated the course material unusually rapidly.

Psychiatrists and psychologists in Managua were interested in learning about short term psychotherapy with couples and families. Besides family therapy, during my visits we discussed ways of helping people suffering from disturbed grief reactions and post-traumatic stress, including rape victims. One woman psychologist who has worked with women raped by the *contras* said that most women are able to accept the experience without neurotic guilt as a part of the hardship of this war of aggression. People have had such a long experience of such suffering at the hands of the Guardia Nacional during the Somoza dictatorship that they are fatalistic about it. The *contras* were formed by the CIA from the remnants of the Guardia and use the same terrorist methods against the Nicaraguan people.

The same psychologist saw a poor peasant farmer who was kidnapped by the *contras* during an attack on a farming cooperative. The farmer had been used as a human target for knife-throwing, then left there.

For the most part, people seem to be managing their grief normally. More of these problems could turn up later, but there is time for preventive mental health work, which is going on. Group preventive work is being done with mothers who have lost sons, widows, demobilized veterans, and people who were displaced or resettled because of the war.

Considering that Nicaragua is a small country, underdeveloped industrially, I was surprised at how sophisticated Nicaraguan psychiatrists and psychologists are. There are only 27 psychiatrists and about 100 psychologists in Nicaragua, mostly in Managua, most in private practice. Many mental health professionals have had some of their training abroad, in Europe, Mexico, or the United States. They are trying to train more professionals as fast as possible in Managua, at the Medical School and at the School of Psychology at the Jesuit-run Universidad Centroamericana.

Still, mental health care is only available in the major population centers. Plans are under way to train mental health workers to work in rural areas as well, and to train primary health caregivers in basic mental health skills.

Nicaragua is like a miniature United Nations, a model of international cooperation. The Swedish government has begun a \$2 million assistance project to develop improved mental health care in the León region. The Italian government is assisting with programs to improve community care for psychotic patients. A

number of individuals have volunteered as I did to provide assistance and consultation. Professionals have come from Mexico, especially to teach family therapy; from Austria and Cuba, to help with group therapy; from Italy to work in child psychiatry, psychology, and social work; from Sweden, to help with the rehabilitation of victims of torture; and from the United States, to consult about family and couples therapy, post-traumatic stress syndrome, and the training of mental health workers. A joint Soviet/Cuban offer to build a large, new mental hospital was rejected, because the institutional care model was inconsistent with Nicaraguan values for mental health care.

SfN recently helped Dr. Friedman send 20 boxes of medical books and periodicals to be used in hospital and medical school libraries in Nicaragua. The donation included a substantial number of books on family therapy and other topics in psychiatry, as well as books in pediatrics, medicine, neurology, hematology, pharmacology, tropical medicine, and dental surgery. Also donated were recent back issues of psychiatric journals, including *American Journal of Psychiatry* and *Family Process*. The books were provided by Dr. Friedman himself and by some of his colleagues and friends in the medical profession.

Books to Be Sent by New D.C. Chapter

In response to our announcement in the May-June issue, three readers of the *SfN Newsletter* in the Washington, D.C. area are forming a chapter of *SfN* to handle shipments of books and journals to Nicaraguan universities.

Thanks largely to the generosity of Newsletter readers, such donations have become an integral part of our program of cooperation with Nicaraguan universities. Here are some of the larger recent donations:

Sam Zaslavsky of New York City donated a collection of over 100 first rate textbooks in pure and applied mathematics, engineering, and the sciences. Another collection of mathematical monographs was offered by Dr. Carol Munroe of Cambridge, MA.

Harry G. Campbell of San Antonio, Texas, sent us an extensive collection of electrical engineering journals, including a nearly complete collection of the *Proceedings of the Institute of Radio Engineers* dating back to 1928!

Dr. Dirk Struik, Professor Emeritus of Mathematics at MIT, donated a nearly complete collection of *Mathematical Reviews* for the years 1954-1977, in addition to the *Mathematical Proceedings* of the Netherlands Academy.

Allen Drabkin, M.D., of Boston, donated a number of medical books and recent issues of the *Journal of the AMA*, the *New England J. of Medicine*, and other important medical journals.

The generosity of last spring's donors would literally have overwhelmed us were it not for the superhuman efforts of Phyllis Palmer, who coordinated the collection, repackaging, and shipping of the ton and a half of reference materials that landed in her hallway last May and June. As it was, there were not enough of us in Boston to respond to the offers of books and journals that continued to arrive over the summer, and we are only now getting around to answering these letters. The formation of the Washington chapter will make the processing of donations much more efficient, since most of our shipments to Nicaragua leave from near Washington. From now on, all questions about donating books and journals should be directed to our D.C. chapter: *SfN*-Washington, c/o Miriam Struck, 9311 Sudbury Rd., Silver Spring, MD 20901.

PEACE PLAN, *continued from p.1*

stop contra aid." This second plan, opposed initially by Honduras and El Salvador, served as the blueprint for the treaty signed in Guatemala. It contains five provisions:

1. A ceasefire in Nicaragua, El Salvador, and Guatemala;
2. Amnesty for all political prisoners and for all insurgent forces who lay down their arms;
3. Negotiations between governments and unarmed opposition groups, an end to all emergency laws and complete freedom of expression;
4. A ban on all outside aid to guerrilla movements in the region, including all aid to the contras;
5. All governments are to cease to provide safe havens for rebel forces.

The responsibility for the continuing bloodshed in Central America is more clearly than ever borne by the United States government. The Reagan administration still hopes that the August agreement can be sabotaged. We are now hearing that continued contra funding is necessary to maintain pressure on Nicaragua to abide by the terms of the treaty. The Honduran Foreign Minister now claims that the agreement is "not an international treaty," and continues to pretend that the contras are not present in Honduras. A Boston Globe editorial places these

maneuvers in perspective: "One of the lessons of the Iran-contra experience is that the Reagan administration's professed desire for peace in Central America is not to be trusted....It is unrealistic to expect Managua to follow through on promises of demilitarization or democratic moderation until the superpower breathing down its neck has separated itself from its violent and duplicitous practices."

Nor can the good intentions of the Democrats be taken for granted. It is true that all the 1988 Democratic presidential candidates have taken positions against continued contra aid, and Senator Dodd himself was invited to defend this policy in a recent article in the August issue of *American Legion* magazine. But Dodd took pains to remind his readers that the termination of aid to the contras does not preclude an eventual direct U.S. military intervention in Central America. And it was a Democratic Congress that passed the Walker Amendment, portending future restrictions on travel to Nicaragua (*see article, p. 2*).

Science for Nicaragua looks forward to an end to the contra war as an opportunity to begin building on the hopes generated by Nicaragua's 1979 revolution for the development of a new science and a new society. In the final analysis, whether or not our country chooses to pursue peace in Central America depends on the willingness of citizens to work to make that happen. Our efforts will be crucial in the coming months.

Send Nicaragua a message of peace...

Science for Nicaragua now has nine instructors in Managua, sharing their skills with the next generation of Nicaraguan scientists. This information exchange is remarkably inexpensive. Most of our operating costs, including travel to Nicaragua and our huge telephone bills, are paid out of the pockets of our volunteers.

But we still have to cover the basic living expenses of most of our instructors while in Nicaragua—about \$1500 per year. So far, 75% of the participants in our program have been graduate students, recent Ph.D.'s, or practicing engineers. All are trained and dedicated specialists, but they have no means of support other than what we provide.

Europeans who travel to Nicaragua in programs similar to ours are typically subsidized, directly or indirectly, by their home governments. We would love to see the U.S. government sending teachers instead of torturers to Nicaragua. But we have no illusion that this will happen soon.

We have no secret funding source. Only your contributions can guarantee that our program will continue to grow. If this is your first contact with **Science for Nicaragua**, we ask that you please take the time to look over this newsletter, and ask yourselves if you can endorse our message to Nicaragua: that relations between our countries can and must develop on the basis of peaceful cooperation, and that this cooperation enriches the lives of all who participate.

If you are already a supporter of SfN, perhaps you have been thinking about sending us a second donation. **Now is the time.** If the new peace plan succeeds, the need for programs like ours will expand dramatically. Thousands of young men and women who have spent years fighting the contras return to the universities to start rebuilding the country. If the peace plan fails, we may soon be faced with the prospect of a full-scale U.S. intervention in Central America, and dreams of development in Nicaragua will be put off for as much as a decade as our country is forced to relearn the awful lessons of Vietnam.

By March 1988, SfN hopes to have 15 instructors—scientists, social scientists, and engineers—on Nicaraguan campuses. To do this we need 100 sustainers by the end of this year. For as little as \$5 or \$10 a month you can be a friend of SfN, and see your beliefs put into practice on a daily basis. Students can become sustainers by pledging only \$10 a quarter. Please clip out the form below—or send us the one you received with this mailing—and make out your tax-deductible contribution to the **Science Resource Center**.

YES! I want to help build higher education in Nicaragua. Enclosed is my first month's pledge for:

\$10/month (SfN sustainer)

\$5/month (SfN friend)

\$10/quarter (Student sustainer)

Enclosed is a one-time contribution of \$____

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

Name: _____

Affiliation: _____

Address: _____

Needs of Nicaraguan Higher Education

by Robert Van Buskirk

Robert Van Buskirk, West Coast coordinator and founding member of SfN, returned from his fourth trip to Nicaragua just as this issue was going to press. His purpose: to evaluate the program after three semesters of cooperation in science education with Nicaragua, and to get feedback from the eight—soon to be nine—instructors now teaching under the auspices of SfN.

Needs of the Higher Educational system are classified into two broad categories: technical and material. In general, the technical needs, which correspond to a shortage of qualified faculty in certain disciplines, vary from one institution to another, while some of the basic material needs are shared by everyone. The latter include supplies of paper, stencils, ink, typewriters, ribbons, and office equipment; all are scarce in Nicaragua.

Here are some of the needs of the individual institutions:

The UNI (National Engineering University)

Of the institutions visited, UNI was clearest on its prioritized needs and how SftP could provide for them. In the area of technical assistance, UNI needs specialists in basic sciences and vocational skills such as auto repair, tool-and-die making, and electronics, as well as in academic engineering fields. Furthermore, the UNI would like people to give two-week- to two-month-long graduate seminars. In the area of material aid, technical books are no longer such a high priority. The UNI now has a source of cheap textbooks in Spanish which our instructors can use. Also the UNI is now publishing a technical magazine called *Nexo*. They need foreign currency to produce it and are asking for foreign subscriptions to raise the necessary production dollars. For subscriptions to *Nexo*, send \$25/year to: Revista Científica UNI, Apartado Postal SV-30, Managua, Nicaragua.

The UNAN (National Autonomous University)

The UNAN-Managua has several prioritized needs which are described in four general project proposals, copies of which were given to me. They are:

- 1) "Proposal for the Creation of a Computing Center"
- 2) "Proposal for the Acquisition of a Language Laboratory"
- 3) "Proposal for Cooperation with the Faculty of Medicine"
- 4) "Development Project of the National Solid State Laboratory"

These proposals detail material and technical needs in the priority areas. (Copies of these proposals can be obtained by

writing to the Cambridge office of SftP, 897 Main St., Cambridge, MA 02139.)

The UCA (Central American University)

The UCA is very happy with the program so far, and gave me a description of further needs. In the technical area, the UCA has prioritized needs in agriculture, electronics and computers, and translation. In the material area, the UCA does not have enough housing for foreign professors and suggested that SfN organize a fundraising drive to buy a house cooperatively with the UCA, as has been done with Spanish and Belgian universities.

The CNES (National Council of Higher Education)

CNES not only has need of basic office supplies, but also of translators to work with foreign delegations in the Olaf Palme National Convention Center. In addition, it is having difficulty maintaining the vehicles it uses to transport foreign visitors.

Five New SfN Instructors in Managua

The fall semester has begun, and five more SfN instructors have joined or are about to join their four colleagues who have been teaching in Nicaragua since last spring. With a mix of three scientists, four social scientists, and two engineers, our team is now more than ever representative of what we see as our natural constituency: educators in the United States interested in making a positive contribution to Nicaragua's development.

More details on the work of the instructors will be printed in the next issue of the Newsletter. Here, briefly, we describe some of their current activities:

At UNI: **Tom Jackson** is teaching two courses in hydrology. He has put together a reference booklet that SftP could publish and distribute for Nicaraguan engineers, and believes the UNI should start an engineering cooperative program. **Billy Gills** will teach mechanical engineering starting mid-September.

At UCA: **Bob Sutcliffe** is teaching several courses in developmental economics. **Carlos Suarez** is teaching two biochemistry courses. **Jennifer Strickler** is TA for the statistics course for sociologists and coteaching the course "Women in Society." **Gil McCann** is TA for the same statistics class, and is working with the Sociology dept computers.

At UNAN-Managua: **Jeff Woodside** is teaching electromagnetism and a course in mathematical methods for physicists. He is also supervising a student project for the annual national science fair. **Tim Brown** is teaching mathematical analysis. **Ibor Briones** is teaching macroeconomics to economics instructors.

Science Resource Center
897 Main Street
Cambridge, MA 02139

Non-Profit Org.
U.S. Postage
PAID
Boston, MA
Permit No. 52696



Cooperation in Scientific Education
with Nicaragua