

Science for Nicaragua Newsletter

Produced by the Nicaragua Committee of Science for the People

Volume 3, No. 3

May-June 1989

Science for the People Celebrates 20th Anniversary!

A reception in honor of the 20th anniversary of the founding of Science for the People was held in Cambridge on June 8. Featured speakers were Barbara Ehrenreich, National Co-Chair of the Democratic Socialists of America (and a former scientist) and Stephen Jay Gould, Agassiz Professor of Geology at Harvard (and one of those present at SftP's founding in 1969). The following article is adapted from the program produced for the anniversary reception by SftP staffers Lisa Greber and Gary Keenan.

What does freedom mean to a scientist who must choose between accepting military funding or abandoning research? What does freedom mean to a woman as the supposed bedrock of *Roe v. Wade* crumbles and support for safe and effective birth control is not forthcoming? What does freedom mean for a person with AIDS who is told there is money to research killing but not how to heal?

Twenty years ago a small group of scientists and engineers began examining the role of science and technology in our political culture. We saw around us the most powerful and affluent country on earth engaged in a brutal war in which the scientific and technical contributions to killing reached new levels of sophistication. We saw deeply entrenched poverty and racism at home. We saw the natural resources and beauty of America threatened by irresponsible exploitation.

But we also saw growing numbers of people dissatisfied with these conditions and prepared to take action. The sense of the possibility of and the need for social change was strong. Out of this sense of resistance, SESPA—Scientists and Engineers for Social and Political Action—was born. And it was a loud, sometimes anarchic, provocative birth, attended with scorn and ridicule on the part of the scientific establishment. The new organization's slogan "Science for the People" soon became its name as well.

Over the years, the specific activities and composition of SftP have greatly varied, but if one looks back to early issues of the SESPA newsletter, the concerns of 1969 are still the focus of much of our work: the military and corporate control of research and development; the need for a coherent national health system; the scientific rationalization of racism and sexism; and the need for ongoing debate on what forms a more humane science and technology could take.

We cannot have genuine democracy in a society where the scientific and technical information and resources vital to determining our collective future are the province of an elite few. In a technological society, a community's right to freedom, its right to

continued on p. 3

The Boys of the Lough

will hold a concert sponsored by Science for Nicaragua, MIT Committee on Central America, and Music for Robin (a Celtic folk music society)

Friday August 11, 1989, 8 P.M

Kresge Auditorium, MIT (Cambridge, Mass.)

Tickets (\$12 and \$15 in advance, slightly more the day of the concert) available from SftP-Cambridge, (617)-547-0370

NICALINE...A Bulletin of News From Nicaragua ...NO.1 April 21, 1989

Making an Economy Scream

by Marco Romero

The commercial embargo against Nicaragua imposed by the Reagan Administration on May 1, 1985 hit this country in one of its weakest spots: its dependence on the U.S. for everything technical. Most transport, machinery and equipment in Nicaragua were U.S.-made, and therefore replacements, spare parts and many maintenance services had to come from the U.S. The U.S. had a virtual stranglehold on the economy of Nicaragua, leaving it few options in view of the cost, time and complications involved in switching to other sources. For a country as poor as this, already strained to the limit by a war, this was almost out of the question.

A less obvious but equally critical aspect of Nicaragua's dependence which the embargo has exploited is the scarcity of technical knowledge and information needed for solving equipment problems and for sustained operation of equipment without outside help. The scarcity of technical skills has combined with the eagerness of the more advanced nations to sell their services. The result is the deepening and perpetuation of the dependence.

Before the embargo, the solution to most major equipment problems in Nicaragua was, "send it to Miami," or "call Miami to send the part on the next flight," or "call Miami to send a technician." I know this was the case in 1982, when I came here. On May 1, 1985 all that easy-to-get help from the U.S. was cut off and Nicaragua was left to fend for itself.

In a state of shock, some local organizations found not only that their stock of spare parts was inadequate, but that nobody really knew what stocks should be kept; not only that they did not have adequate manuals, but that nobody around knew how to use them. To make matters worse, after 1979 thousands of technicians and engineers left Nicaragua, largely in search of the good life in the U.S. This "brain drain" has intensified since the beginning of the embargo, weakening Nicaragua even more.

The embargo has obstructed production, lowered the quality of public services and fostered inflation and economic chaos. It has made the lives of Nicaraguans more difficult and impoverished. It has succeeded in most of its goals, except in the main one: it has not rendered the people miserable enough to make them kick out the Sandinistas and reverse the revolution.

Ultimately, the embargo might serve a painful, but useful purpose: reminding Latin Americans of the necessity of breaking with the centuries of dependence, ineffectiveness and failure which have led to many of their current problems. It might also remind those who would help Nicaragua, or any underdeveloped nation, that developing local technical resources to handle future problems is just as important

continued on p. 2

SPECIAL 20TH ANNIVERSARY OFFER FOR NEW SUBSCRIBERS TO

Science for the People MAGAZINE

\$15 for 1-year subscription (regularly \$18)

Coupon on p. 3.

NICALINE, *continued from p. 1*

as solving immediate technical difficulties. Indeed, just doing today's job for them may ultimately aggravate the vulnerability that goes with dependence.

(MARCO ROMERO, a mechanical engineer, has lived in Nicaragua since 1982, working at the national airline, Aeronica, and teaching engineering. Before, for 30 years, he was an engineer with Texaco in Texas and Venezuela and with Boeing in Seattle.)

Tiscapa Lagoon

by David Kattenburg

According to legend, the volcanic lagoon in the middle of the city of Managua spilled from a broken egg that had been stolen by a couple of Cuzcatl indian witches. Whirlpools danced upon its surface, and magical serpents cavorted beneath. The Tiscapa Lagoon has lost its magic. According to Salvador Montenegro, a scientist at the Nicaraguan Centre for Research on Aquatic Resources, Tiscapa is becoming "putrified" and "totally septic."

At a recent gathering on the lip of the crater, overlooking the teardrop lagoon, a "permanent protest" was established by several hundred environmentalists, who want to inform the public, and promote activities to reverse the pollution. "We have a latrine in the very middle of our home," complained an ecology student from Managua's Central American University.

In the rainy season between May and October, 30,000 tons of soil eroded from the hills overlooking Managua are deposited into the 400 square-meter lagoon. So are organic chemicals, pesticides, sewage, sediment and animal carcasses. To make matters worse, the once-wooded slopes above the lagoon have been stripped by people hungry for firewood. Fifty years ago, people warned of the dangers of Tiscapa's thick forest, and the wild beasts that hid within. "Evidently," says Salvador Montenegro, "the change in the environment between the 1920's and today is very great, because there isn't any forest around Tiscapa, much less wild beasts."

The problem with Tiscapa is that it has no outlets — only groundwater inlets. It cannot cleanse itself. Oxygen is disappearing, and so are the fish. Tiscapa used to be a great place to swim. In fact, the municipality invested money to turn it into a recreation spot. Music festivals were held in the stone amphitheatre along the water's edge. Now, Tiscapa is a breeding ground for bacteria, and perhaps hepatitis. "All this," says Managua biologist Mauricio Lacayo, "is precisely an example of the sorts of things not to do."

Much of the filth pouring into Tiscapa comes from drainage ducts to the east, that were harnessed together seven years ago in order to channel water away from the barrio lying next to the lagoon, which was constantly getting inundated. But now, spilloff from this huge aqueduct poisons the lagoon and introduces a health menace of major proportions. Environmentalists want the aqueduct eliminated. Others want a system of dams and filters to be built, or a subterranean pipe that would divert water to Lake Managua. Lake Managua is itself horribly polluted, but experts like Salvador Montenegro say that it can absorb the influx of contaminants more gracefully than Tiscapa. The cleanup of Tiscapa, he says, could act as a "pilot project" for the subsequent cleanup of the lake.

In the past, the municipality of Managua has been criticized for its ineptness on environmental issues. According to the Association of Nicaraguan Biologists and Ecologists (ABEN), the municipality had been informed back in 1980 that the merging of various drainage ditches would lead to the destruction of Tiscapa. Their warnings were ignored. The independent pro-government newspaper *Nuevo Diario* has referred to the response of authorities to the deforestation of

Tiscapa as "contemplative and indolent."

Of course, the Reagan Administration has also come under fire from Nicaraguan ecologists. Thanks to the U.S. trade and economic embargo, cooking propane is expensive or hard to find. People chop down firewood on the slopes of the crater, leading to erosion and pollution. Thanks to the contra war, Nicaragua is starved for cash, and cannot afford expensive cleanup projects. Annual revenues of the city of Managua total 350,000 dollars. It costs more than this to repair the city's potholed streets.

"Certainly, the war is tied up in this," said a recent editorial in the government newspaper *Barricada*, but the Revolution is partly to blame too. "To build a new society, we have the responsibility to incorporate into the conscience of this new society — as a part of the revolutionary mentality — a new attitude towards nature. In the final analysis, a new attitude towards future generations."

In contrast with Managua's Tiscapa Lagoon — which is still quite pleasant to behold, by the way — the Nicaraguan environmentalist movement is alive and well. In the barrios surrounding Tiscapa, educational sessions are taking place. The municipality is helping people to grow their own trees, which they can use for firewood. A 12-member committee has just been struck — consisting of representatives from the mayor's office, local barrio groups, the Health Ministry, ABEN and the Central American University's School of Natural Resources — to deal with pressing environmental problems. The fate of Tiscapa is a top priority for this group. Students are reforesting the lagoon's rachitic banks. Ecologists in Managua have an agenda full of tasks to accomplish. Saving the Tiscapa Lagoon is number one. Once peace comes, they and Tiscapa might just have a fighting chance.

(DAVID KATTENBURG is a Science for Nicaragua cooperant, at the Medical School of the National Autonomous University, Managua. He is a freelance writer and radio broadcaster.)

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Video Available on Nicaraguan Women

The 105-minute video "Frontlines of Feminism: Debates in Nicaragua" is available for \$35 from the Kovalevskaja Fund (free of charge in Latin America). The video is in two parts. The first 40 minutes are taken from a meeting of women in Managua to discuss the draft of the 1986 Nicaraguan constitution; the women debate such issues as abortion rights, paternal responsibility, rape, wife abuse, prostitution, divorce, housework, and discrimination. The remainder of the video consists of a speech by Nicaraguan Interior Minister Tomás Borge, recorded at the First Central American Conference on Women in Science, Technology, and Medicine in 1987. The video is in Spanish; an exact bilingual transcription and translation will be sent at no extra charge along with the video. To order, send a check payable to the Kovalevskaja Fund to Dr. Ann Hibner Koblitiz, Director, 6547 17th Ave., N.E., Seattle, WA 98115.

The Kovalevskaja Fund is a small non-profit foundation which aims to encourage women in science, technology, and medicine in developing countries. It is named after the Russian mathematician, socialist and feminist Sofia V. Kovalevskaja (1850-1891).

Reports from Nicaragua

Barbara Francis

My responsibilities at UNI fall in three categories: a) I will again teach a course in solar energy at some time during the semester (course work in the Maestria de Ingeniería Ambiental, my program, is done in week or two week-long blocks of day-long classes.) The outline for this course was appended to my SfN application; b) I will oversee the r&d and production of solar stoves at the "Carlos Fonseca" cooperative. The C.F. coop is located in a rural area outside Managua, but it has been equipped via UNI with a variety of power tools and a warehouse. The UNI-C.F. arrangement is an experiment in rural industrial production with university participation in design, market analysis, etc. (I also expect to work with SfN anthropologist Suzanne Baker to produce an initial study of the sociocultural resistances to solar ovens in Nicaragua.); c) I will design and direct an experiment (series of experiments) to assess the influence of climate variables, especially solar radiation, on processes in a sewage treatment pond near Masaya. By a fortunate combination of circumstances INETER maintains a weather station near the pond where UNI maintains a laboratory. This effect has yet to be studied in a tropical setting.

Stephen Solnit

My primary work is teaching in the School of Computer Engineering at the National Engineering University (UNI). I am teaching a core software course to the whole of the second year called "Programming Languages." This should be three classes, but due to the faculty shortage, I teach all 75 students in one section. In addition to this, I have arranged with student leaders to teach two ungraded courses to fill in major gaps in the curriculum. One course is in the C programming language, and the other is in MS-DOS and the architecture of the IBM PC, the primary system that the students use. Beyond this, I work part-time programming at Sistemas Industriales, a large software development effort co-sponsored by the Nicaraguan government and private investment. Its purpose is two-fold. First is to develop a comprehensive data base system designed to meet the particular needs of government and industry in developing countries. Second is to provide Nicaraguans with first hand experience in a major software project...April 17, 1989."

Suzanne Baker

After having taught technical English at the UNI as a volunteer under Robert Fox last semester, I am teaching a course on "English and Culture in English-speaking countries" to the docentes of the Department of Idiomas at the UNI. In addition to writing a folleto for my own course, I am correcting, improving and helping to design the folletos that exist for teaching English to the 9 carreras at the UNI (level 1 and 2 of technical English for each carrera — particularly a specific for each carrera). Finally, I am providing special assistance to the professors who teach English for computation students and helping them to

organize volunteers for the aforementioned. In my spare time (!) I am doing doctoral research on men's and women's changing roles in Nicaragua (since the Revolution), focusing particularly on the impact of the agrarian reform and membership in cooperatives in Region I. I am a Ph.D. student in anthropology at Boston University and have 5 years teaching experience in various topics.

20th ANNIVERSARY, *continued from p. 1*

choose, must include the right to understand and affect the practice of science in order to ensure that research priorities and new technologies reflect our real needs for housing, health care, and a sustainable future, and not the greed of the defense department.

...In some ways the U.S. needs Science for Nicaragua more than Nicaragua does. We need to keep alive the idea that science can serve human needs. In an era of growing crises in the environment, health care, housing and militarism, science ought to be able to do more than restore our industrial "competitiveness."

Can we bring the lessons of SfN home? Can we offer an alternative to militarism and corporate greed to the next generation of scientists? Can we create institutions that will begin to embody the practice of science as we envision it? These are some of the challenges facing us as we enter our next twenty years. The newly formed Science Shop Working Group is taking some of them on. The group is studying examples of "people's science" ranging from SfN's Technical Assistance Project (TAP)—a joint project with the Black Panthers and other community groups that tried to demystify technology by teaching basic technical skills—to the Dutch Science Shops that take their research agenda from community concerns.

Science for the People is not just a series of specific achievements in science, but also a commitment to make our own lives more humane and responsible, to make the struggle for a socially responsive science part of a much larger struggle for meaningful social change. It is only in this larger context that we can free our science and ourselves.

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, Eric Entemann, and Gary Keenan.

SfN chapters:

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I want to take advantage of *Science for the People's* 20th Anniversary offer. Enclosed is \$15 for a one-year subscription. (First time subscribers only)

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

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Recent Donations Raise Half of SfN Budget

After several months of unanticipated austerity, SfN has now returned to financial normalcy thanks to a spate of recent donations. Heading the list is a grant of \$5000 from the New England Biolabs Corporation, a consistent and generous benefactor. Grants from the Rockefeller Family Fund and the Xerox Foundation provided about \$5000 more. Our meeting at Harvard Medical School (see below) netted another \$600. Several large individual and group donations brought the total close to \$12,000, or half of our projected budget (excluding donations in kind) for 1989.

These figures do not include donations in kind, which run to about \$10,000 a year in donated books, journals, and office supplies, nor the expenses of the SfN hydrology program which is independently financed.

Special thanks are due to Matthew Schreiner of Xerox Corp. who raised money for material aid among his colleagues. In addition to providing a video camera for the medical video project at UNAN (described in Vol. III, No.1 of this newsletter), Matthew's efforts led to matching funds from the Xerox Foundation which will provide a year's support for at least two instructors in Nicaragua.

Nicaraguan Doctor Speaks at Harvard

Dr. Josefina Bonilla, head of primary care at the National Autonomous University of Nicaragua in Managua and a participant in a UNICEF-sponsored project at Tufts University, spoke at Harvard Medical School on May 4, at a reception jointly sponsored by SfN and the Harvard Medical School Health and Human Rights Group. About fifty people attended the event, at which Dr. Bonilla described the conditions facing health professionals and university professors in Nicaragua after eight years of the *contra* war.

Dr. Bonilla was introduced by Dr. Daniel Goodenough, Professor of Anatomy and Cellular Biology at Harvard Medical School.

"Compactación" at the UNI

from the UNI Gazette, No. 6, January-February 1989

The restructuring at the National Engineering University (UNI), carried out in accordance with the report of the ad hoc commission created in September of 1986 and initiated gradually beginning in 1987, accelerated violently during the first semester of the present

academic year, using the methods of economic austerity which are better known under the name of *Compactación*. Although painful in its immediate effects, *Compactación* is a lesser evil when compared with the phenomenon of hyperinflation caused by the aggression [*i.e., by the contra war, Ed.*]. It implies acute limitations in human and material resources and, by that token, requires greater efforts and creativity on the part of all members of the university community.

In the UNI, 164 positions out of a total of 770 were affected. The effects were felt in the administration, both among deans of academic faculties and among those with purely administrative duties. In general, all the changes went into effect on the 20th of February...

The positions "compacted" [*i.e., eliminated*] include one vice-rectorship, the directors of research and graduate studies and of the faculties of basic science and of technical specialties, and the offices of general services, technical-material supplies, and transportation, which will be combined in the office of administrative services.

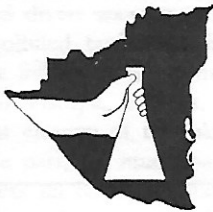
It is hoped that this process of fusion and eliminator of positions will also oblige an optimization of resources, which is the reason for the reassignment of personnel.

Continuing Education at the UNI

The UNI will be offering 23 graduate-level courses during the 1989 academic year, according to a report in the January-February UNI Gazette. All but five of these courses will be carried out in conjunction with foreign universities and non-governmental organizations. Together with the Confederation of Central American Universities and a West German NGO, the UNI will offer a course in Evaluation of Damage to the Environment. The Italian group GVC is sponsoring four courses in the use of software and a course in solar and wind energy. The Autonomous Metropolitan University of Mexico is offering two more computer courses, a course on repairing structures damaged by earthquakes (!), and courses in electrical and chemical engineering. Two Cuban universities will be sponsoring a total of seven courses in subjects ranging from irrigation and agricultural mechanization to workplace design and road construction. Finally, the UNI itself will be teaching several advanced courses in environmental engineering and computer science.

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