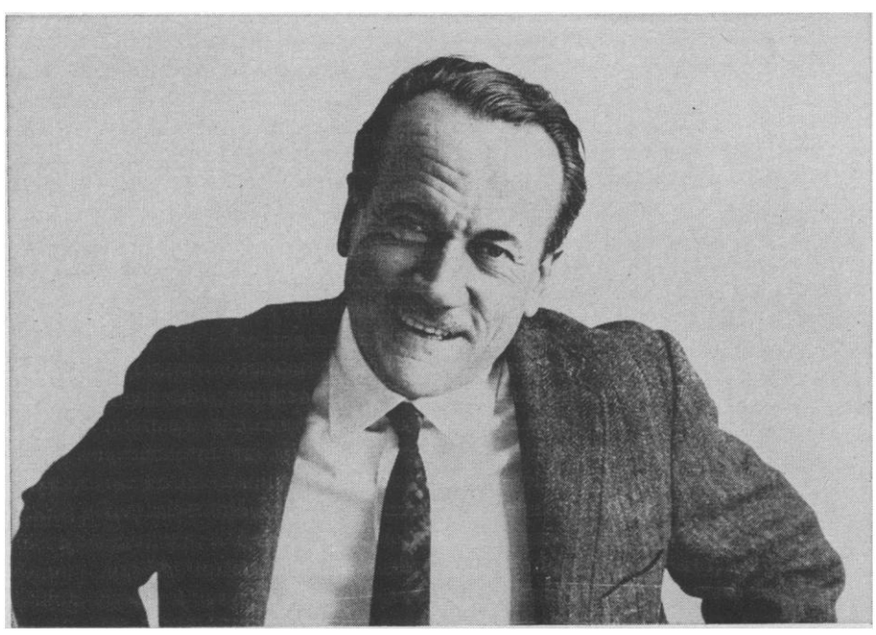
Italy: First Ph.D. Program Stalled by New and Old Politics

Naples. In 1967, following Italian pleas for the United States to help Europe close the "technological gap," the two countries agreed to establish here a Ph.D.-granting institution to be known as the International Studium of Molecular Biology (*Science*, 23 June 1967). In view of the great catalog of deficiencies in Italy's scientific, technical, and educational enterprise, it is questionable whether this esoteric field rated priority. But the Johnson administration, though concluding that Europe would have to remedy its own "gap" problems, nevertheless wanted to do something, preferably something inexpensive but showy. Molecular biology, having acquired the glamour once unique to physics, nicely filled the requirement, and besides, there was a euphoric proposal out of the University of California, Berkeley, prophesying innumerable benefits to be had from planting the oddly named institution in Italy. (The proposal for U.S. participation, with Daniel Mazia of the Berkeley zoology department listed as project director, explained the choice of "Studium" as follows: "Why turn to the 13th century for the name of an advanced school in the most modern of sciences? If it is an evocation of the past, the spirit which is evoked is that of the very youth of modern learning, the exuberant inoculum from which the modern university was generated in Bologna, Paris, Oxford. . . . In essence, it is a voluntary association of masters who will conjoin their energies in Naples to educate the young scholars to the level of masters.")

More substantively, it was argued that molecular biology merited support because of the central place it was coming to occupy in all the life sciences, and furthermore, it was pointed out, Italy already possessed a sound base to build on in this field: the International Laboratory of Genetics and Biology (ILGB) at Naples, a productive research center with a scientific staff of about 60, which had become a regular stopping place in molecular biology's worldwide circuit.



Adriano A. Buzzati-Traverso

Established in 1962 with support from Euratom, from the Italian atomic energy agency, and from Italy's National Research Council (NRC), the equivalent of the U.S. National Science Foundation, the Naples laboratory had been conceived by, and was headed by, one of the leading rebels and reformers of Italian science, Adriano A. Buzzati-Traverso, a geneticist with wide-ranging international connections. Since Buzzati-Traverso had long been a critic of the archaic state of Italian universities, where scientific training tapers off somewhere around the level of the American master's degree, his prestigious and, for Italy, unique laboratory was cited as a sound starting place for responding to the Italian plea for help.

With the proposed Studium appended to the existing laboratory, the argument ran, these institutions, by their example, would help lead Italy's universities into modernizing their programs of scientific education. The National Science Foundation agreed to give Berkeley a 3-year grant totaling $486,000 to provide salary and travel funds for several American scientists to spend part of each year in the Naples laboratory. And Italy's NRC, which, in the meantime, had become the sole source of support for the laboratory, agreed to provide a similar amount, beyond the regular $2-million-a-year budget, to pay for an expansion of staff, facilities, and fellowships. Eventually, it was agreed, there would be 60 students, drawn from all over the world, taking a 3-year course leading to Italy's first Ph.D. degree. Berkeley's proposal to NSF stated that the Studium "could open its doors in Naples by 1969."

Today, however, more than a year and a half after the plan to establish the Studium was first announced, not only has no progress been made toward bringing it into existence but the Naples laboratory from which it was to grow is currently in so great a state of turmoil that questions are being raised as to whether it can survive, let alone serve as a spearhead for graduate education in Italy.

The difficulties that have enveloped the laboratory do not lend themselves to easy examination, but fundamentally they seem to come down to two points. The laboratory, though not a university institution, is feeling ideological shock waves from the student revolts that

have raged through Italian universities over the past 2 years. And Buzzati-Traverso, founder of the laboratory and a key figure in its graduate plans, is awkwardly caught between the far-Left politics that engages a good portion of his staff and the conservative, bureaucracy-ridden politics that prevails in the government agency that supports his laboratory.

The students voice grievances whose validity is beyond dispute. For example, the University of Rome, which was closed last month following student occupation of many of its buildings, has grown to an enrollment of nearly 70,000 in facilities designed for fewer than 20,000, with no commensurate increase in teaching staff. (In one occupied mathematics building the students busied themselves by programming the thoughts of Chairman Mao into a computer.) The University of Naples medical schools went out on strike early in January over the issue of the personal financial enrichment that holders of professorial chairs receive from the clinics run by the university. While the young physicians who do most of the work receive no income, the chairholder at the head of each clinic gets 17 percent of the gross from patient services. It is not uncommon for a chairholder to take in over $100,000 a year on this basis, plus income from his private practice and a government salary.

Attacking the System

These are merely some of the high points of neglect and corruption that have aroused the students. But the student movement in Italy has gone beyond demands for eliminating conspicuous outrages. As in the case of student movements elsewhere, its most active and influential elements have come to regard local problems as inevitable outgrowths of a deeply rotten system, and they want to tear apart the system, not simply correct its obvious misdeeds. Central to their proposed therapy for society is the elimination of rank and hierarchy and replacement of these by widespread participation in the governing of institutions. The Naples laboratory has had no sit-ins, occupations, or demonstrations, but many of its staff members, mainly younger scientists not long out of the universities, have caught the fever of participatory democracy. And though deliberation rather than confrontation has been the process, ILGB, aided, ironically, by the reformist atmosphere created by Director Buzzati-Traverso, is en route to becoming a place where the lowliest bottle washer will have as much to say as the most venerable scientist in determining many, if not all, of the affairs of the laboratory. In fact, one of the laboratory's three scientific sections (which has christened itself the Tri-Continental Section in honor of Latin America, Asia, and Africa) has already decided that, since cleaning glassware is traditionally regarded as a lower order of activity, it would be psychologically as well as politically beneficial to have everyone—bottle washers and venerable scientists—pitch in and share this labor. This change is to be accompanied by efforts to teach more complex skills to those who heretofore have done the scrubbing. The Tri-Continental Section has also decided to do away with the time clock, a device which only technicians have been required to use. And, in regard to one of the holier issues of scientific life—money for travel—the Section has decided that everyone, technicians and scientists alike, will join in deliberations on requests for travel funds. Also under consideration in various parts of ILGB are proposals to eliminate signatures from research papers, or perhaps to inundate papers with signatures, the rationale being that community rather than individuality should be stressed. Behind this proposal is also the idea that research should be for the advancement of knowledge and not for individual glory.

Such are some of the ideas currently running through the International Laboratory of Genetics and Biology. It is all being done in a spirit of experiment and excitement, with frequent meetings, large and small, that often run from early afternoon to late evening. Some researchers say it has become extremely difficult to carry on scientific work. Others say that is not the case at all. Some refuse to go along with the new glass-washing scheme, amid a good deal of uncertainty as to how their glass will be cleaned. But in the Tri-Continental Section, which is the only one to adopt the plan so far, a strong majority favors it. One who is opposed is E. Scarano, who was reorganized out of the directorship of the research group on cell biochemistry when the three-section plan was adopted in January. Scarano said, "Progress not only in science but in civilization is based on specialization." He refuses to wash glassware, and he also doubts that his particular needs in cleaning up equipment can be properly met under a centralized wash-up scheme that is being planned.

Now we come to Buzzati-Traverso, the 56-year-old geneticist whose highly successful laboratory and prospective Studium are something of an affront to the feudal chiefs who run Italian science. (Still to be published by the Italian government is a 2-year-old report by the Organization for Economic Cooperation and Development, strongly critical of the state of Italian science and education. The only Italian-language copies were prepared by dissident students; they were first distributed last year when a group of scientists occupied the premises of the National Research Council in Rome in protest against the government's neglect of scientific research.)

Man of Many Portfolios

Buzzati-Traverso, though founder of the laboratory and spokesman for it before the Rome bureaucracy that pays its bills, is actually not there very often, for he is involved in many other activities. Since 1948 he has been director of the Institute of Genetics at the University of Pavia, 375 miles north of Naples. He is well acquainted with the American scientific scene, having spent 8 years, in all, at Berkeley and La Jolla between 1951 and 1961, and he maintains close contact with colleagues in the United States. In 1966 he was president of Italy's group at the Pugwash conference and was instrumental in setting up the European Molecular Biology Organization. Last year he ran unsuccessfully for Parliament. For many years he has written on scientific subjects for various newspapers, and at the beginning of this year he became director of *Sapere*, a popular scientific magazine. Besides denouncing the professorial chair system for its strangling effects on Italian science (despite the fact that a good deal of his influence in scientific matters flows from his being himself a chairholder, at Pavia), he also speaks out in behalf of birth control, and this now and then brings a denunciation from Vatican sources. Buzzati-Traverso's activities thus run nearly the length of the Italian boot, but, not unreasonably, he seems to find Rome

most congenial (he maintains a residence there—a penthouse on the Tiber). And, though the Naples site was chosen for his laboratory in conjunction with the government's plan for developing the south of Italy, Buzzati-Traverso is now convinced that Naples is not a suitable site for molecular biology. As stated in a report on the laboratory covering the period 1962 to 1967, "the relatively low economic level of the region, together with the limited number of efficient public services available, have sometimes rendered the living conditions of the staff members difficult. Very limited relations have been established with the resident population, so that social extramural activities of staff members and guests are limited to their own small community." Staff members tend to state the matter less gently. Buzzati-Traverso's solution is simple: move the laboratory to Rome. But doing so is not so simple, for now that participatory democracy is a powerful force in the laboratory, so crucial a decision is naturally one for all hands to decide, and since the technicians and administrative workers—most of them Neapolitans and quite happy about it—far outnumber the scientists, the Naples site has the votes.

Laboratories Crowded

Further complicating the problem is the fact that the existing laboratory sits on a crowded site and is housed in buildings that were originally regarded as temporary. Efforts to acquire additional land, or a new site, to accommodate the facilities required for the Studium have long been tangled up in a brand of municipal politics that makes the Boston variety look simplistic. So, Buzzati-Traverso has been going before various councils in Rome to argue for a move to that city. In the meantime these councils have decided that it is inappropriate for him to hold a chair at Pavia and also direct the Naples laboratory; when his appointment at Naples ran out in November it was not renewed, though in fact he stays on as director.

Where do these various conflicts leave the plan for the Studium? In response to a questionnaire drawn up by the National Research Council, overwhelming majorities favored both staying in Naples and proceeding with the Studium. But the Studium concept is no longer so trouble-free as it was in the happy days of 1967, when Donald F. Hornig, then the President's science adviser, took part in a cheerful signing ceremony with visiting Italian officials. The Studium emerged from concern over the technological gap, but the Italian student movement has developed strong reservations about restructuring science and education for the purpose of emulating American industrial productivity.

This brings us to the laboratory's leading personification of radicalism, Guido Di Prisco, a 31-year-old enzymologist who has spent a good deal of time in research at the Albert Einstein College of Medicine of Yeshiva University, having returned from his most recent stay there just last December, via an invigorating visit to Cuba. As things have worked out, DiPrisco and Buzzati-Traverso frequently find themselves clashing head on, but the two of them, in fact, have a bit of common ground in their deep-felt opposition to the feudal organization of Italian science.

When DiPrisco returned, the ILGB had just carried through a reorganization that resulted in 13 small and autonomous research groups, each headed by an administratively powerful chief, being combined into three separate sections, with authority to elect their own chief and design their own methods of administration. Those who like this change say that Buzzati-Traverso brought it about through his interpretation of a directive from Rome calling for no more than a tidying-up of administrative organization. In any case, prior to his return, DiPrisco was elected chief of the section that chose to label itself Tri-Continental. (The others are simply identified by number.) And it is from that position that he has come forth as the laboratory's leading radical on a variety of issues—including the Studium.

Modest in speech and ready to acknowledge his own uncertainties and inconsistencies, DiPrisco does not pretend to offer a comprehensive theory for restructuring scientific research, or even for restructuring the one institution in which he is employed. Rather, he conveys the impression of giving back partly digested pieces of ideology picked up in various travels and reading. Nevertheless, he has a potent effect on many of his colleagues. "In our deliberations," he explained, "the question became, 'Is intellectual work superior to manual work?' In the present system, it is regarded that way and it is rewarded accordingly. We want to change that, so that no distinctions will exist unless they arise naturally. We have eliminated group leaders in our research projects. Now research is organized around problems, rather than around people. And if leadership naturally arises, it is given informal recognition, but no more than that."

Research and Reality

Is this method conducive to scientific productivity?

"It's far too early to tell," DiPrisco replies. "I don't know. But scientific productivity is not the only value that we should follow. Everywhere in the industrial world, science is getting remote from society's needs. People now do research for individual reasons, ranging from narcissism to trouble with their wives. It is more and more difficult for a peasant to understand what a geneticist does. If it is not understandable, it is too easily misused. If it is not understandable, it has no connection with reality."

In connection with the Studium, DiPrisco offered the view that "student unrest arises from the class system and from the process of selecting people for elite groups. The Berkeley plan would not help the university system. It would only stress the tendency to elitism."

"On a short-term basis," he said, "we should work closely with the students and not consider only the success of science, international competition, and issues such as the technological gap. On a long-term basis, we need a revolution."

Buzzati-Traverso is inclined to scoff at these revolutionary formulas for Italian science. But, caught between the young radicals in his laboratory, and the bureaucracy he must deal with in Rome, his attitude seems to lie somewhere between exasperation and resignation. Without his presence, it is often said, the laboratory might have a great deal of difficulty in maintaining its international role and reputation. As for the Studium, he points out that NSF is getting impatient about lack of progress. But it is difficult, if not impossible to proceed with the venture in Naples, and there is no indication that it can be moved to Rome. So, at this point it is stalemated.

Such are some of the matters that have arisen in connection with the plan to bring doctoral education to Italy.—D. S. GREENBERG