collection and assessment we hope that you will be able to enlist the aid of the National Academy of Sciences."

Last spring, NAS President Frederick Seitz appointed a 12-man committee headed by Konrad B. Krauskopf of Stanford. The committee has met twice, once in Alaska. An engineering panel was created by the committee and has been involved in the first-phase work on soil analysis and in advising on construction regulations.

Questions of financing remain to be settled, but the committee hopes to perform two main functions. First, it is already acting on Hornig's request that it review the efforts of both government agencies and private organizations with a view to advising on how gaps in scientific and engineering work may be filled. Second, the committee is interested in compiling a comprehensive report, requiring 2 or 3 years' work, which would cover not only geology and seismology but results of the quake which could be assessed through the life and behavioral sciences. This report would deal in detail with the response to the earthquake of the earth itself, of man-made structures, and of living things.

A Great Opportunity

The Alaska earthquake, as one scientist put it, was a "great catastrophe" but also a "great geophysical opportunity." In the words of the task force report, the earthquake provides "a unique opportunity to obtain and make widely known reliable scientific data concerning the cause and effect of seismic disturbances."

Knowledge gained could be applied in minimizing damage from future earthquakes and, hopefully, in developing means of predicting them.

The commission in its report recommended several specific measures to reduce destruction and loss of life—establishment of a seismic wave warning system in Alaska, improvement of seismic equipment, identification of hazardous areas, and promulgation of more effective building codes to be more rigorously enforced.

Revealingly, however, the lead recommendation of the commission was to "conduct additional research on earthquake prediction techniques and on the propagation of seismic sea waves."

Achievement of accurate prediction techniques is obviously highly desirable, but hopes for development of such techniques appear to be higher among nonscientists than among researchers in the field.

Until recently, theories of earthquake prediction were a hardly reputable subject among theoretical seismologists. Hypotheses had been put forward, for example, that disturbances in magnetic fields or ground tilting presaged earthquakes, but these were not substantiated to the satisfaction of geophysicists at large.

In the last few years, however, several things have happened to lend greater respectability to the subject. In Japan, where earthquakes are a familiar and often devastating feature of life, scientists decided that they owed it to their country to make a serious, organized effort in the field of earthquake prediction. No claims have been made, but an earthquake research group which included world famous seismologists has closely examined the field and identified areas where work would be justified and should be supported.

In the United States, the government's Project Vela, aimed at improving means for detecting nuclear testing, has contributed to the flourishing growth of geophysics in recent years. The sizable sums of federal money spent on Vela attracted sophisticated instrument designers to the field, and the flow of research contracts to the universities produced coveys of graduate students in seismology.

Scientists have also been acquiring significant knowledge of the way rocks fail, and new long-distance survey devices have provided detailed data on tens of thousands of earthquakes.

A Major Effort?

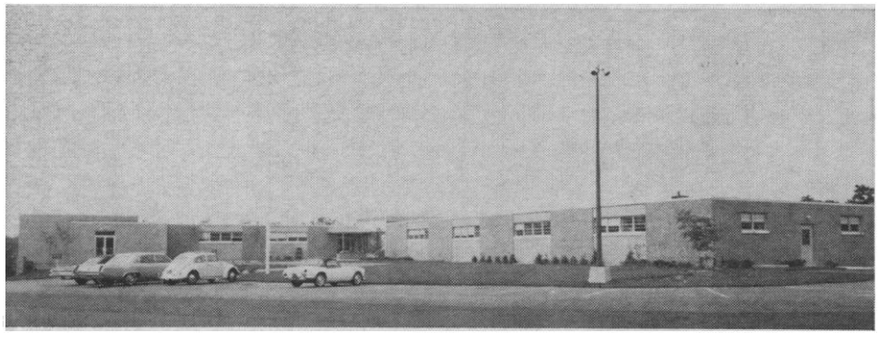
A major effort on earthquake-prediction research would require expenditure of substantial sums, compared to the almost negligible funds now being spent. The burden of deciding whether a bigger effort now is justified seems to lie primarily with an OST panel on earthquake prediction which was formed after the Alaska quake. The panel, composed of some of the most highly respected men in the field, has been meeting in the passionately anonymous style normal at this stage for OST and the President's Science Advisory Committee panels. Within a few months the panel is expected to come up with a recommendation on whether, in view of the state of the art, more money and talent can profitably be employed in research on earthquake prediction.—JOHN WALSH

Science in the Suburbs: Private Research Unit Discovers Flaws in Dependence on the Local Community

The Waldemar Medical Research Foundation, a small cancer research facility located on Long Island, New York, has spent the summer responding to articles in the Long Island daily newspaper *Newsday* that charged Waldemar with misuse and mismanagement of publicly donated funds. The repitition of charges (*Newsday* printed over 25 articles in 2 months) has produced a review of Waldemar's administrative records by the Nassau County district attorney and has caused the withdrawal of community support from an institution that was unusually close to the local population. Ordinarily such a situation would go unmarked by the wider scientific community, for neither the paper nor the foundation is well-known, and the conflict between them has overtones of a localized guerrilla battle for the support and affection of the Long Island natives. Though the details are primarily local, however, the Waldemar story illustrates some of the obstacles to closer ties between "science" and "society" that exist even when representatives of both groups have earnestly tried to communicate; it underscores the vulnerability of private research laboratories that lack affiliation with a large university or other institution; and, finally, it raises certain questions about the best method of providing support for science. While the argument about the desirability of extensive federal support continues, the summer experience at Waldemar suggests that federal support is probably to be preferred to certain of the alternatives.

To understand the extent of Waldemar's difficulties, it is necessary to understand the rather special ways in which the institution functioned in the community. Waldemar was founded in 1947 by Norman Molomut, then a bacteriologist at Columbia University's College of Physicians and Surgeons, where he had received a Ph.D. in 1939. Molomut's efforts to establish his own laboratory grew not only out of a personal wish to be his own master but also out of a conviction that the practice of science ought to have closer and more spontaneous ties with the community than was possible in more formal situations. Waldemar, named for an early donor, was thus to conduct social as well as scientific experiments.

At first the bills were paid mainly



Building of the Waldemar Medical Research Foundation.

by a handful of private donors impressed with Molomut; individual scientists also won the support of the National Institutes of Health and the National Science Foundation for their research projects; and, as Waldemar developed, charitable contributions from the local lay public came to play a significant role. The government's contribution over the years has averaged between 30 and 40 percent, and has never risen above 50 percent. The balance has always been supplied by the general public. As the budget grew, Waldemar expanded from its original home in a Brooklyn loft to a tiny laboratory in Port Washington, Long Island; last January it moved to new headquarters near a blossoming industrial park in Woodbury, Long Island. Although, compared with its earlier facilities, Waldemar's new home is sumptuous, compared with many university or industry laboratories it is still exceedingly modest. The research staff consists of nine professional scientists with a supporting staff of about 30; the new building also houses a cancer detection clinic for Long Island residents which is staffed largely by area physicians serving on a part-time basis. The budget generally averages around $400,000 a year.

Over the years, although a variety of scientists of some national reputation came to Waldemar, only those stayed who were willing to suffer certain deprivations in return for their pursuit of independence and who shared a commitment to Molomut's ideology. For the most part, those who stayed were less well-known than those who came and left.

This ideology, essentially democratic, called for integrating Waldemar with the life of the community, most importantly by opening its doors to neighboring youngsters. Children came for Sunday brunches and discussions known as "Conversations in Science"; they came during the winter for after-school experiments; and from 1955 on they came for full-scale summer programs of laboratory study and apprenticeship to practicing scientists. In addition, the staff established ties with local secondary schools and school teachers, advising them on science curricula and other activities. Beginning in 1958, the National Science Foundation took over support of many of Waldemar's educational programs, and it indicated that Waldemar's pre-Sputnik summer programs were one of the models on which NSF's larger programs were based. In addition, the Waldemar staff supervised the graduate work of a few students from nearby universities, gave public lectures, and made its services available for lectures and advice to local hospitals.

Community Devotion

The apparent relish with which Waldemar scientists shared their experiences with local children was only one factor in securing the devotion of their parents. Another was the personality of Molomut himself, who frequently spoke to private groups about his hopes for Waldemar and who appears to have had the gift of persuading his listeners that science (Waldemar) and society (themselves) had the same goals. No "town-gown" split developed. Far from being alienated, adults felt included in Waldemar activities, in part swept up in the romantic appeal of a search for a cancer cure that was being carried on not by unknown scientists, separated from them by a slick, fund-raising bureaucracy, but by friendly, accessible individuals who were always willing to tell lay people about their research.

In return for these satisfactions, the local citizenry made substantial contributions. Spearheaded by housewives organized into auxiliary units known as Waldemar Town Councils, the immediate community supported a variety of benefit activities which netted well over $100,000; an average of about $60,000 came directly from the housewives' councils. Another $100,000 and more came from a different community —Manhattan society ladies who in 1962 began sponsoring an annual "Zebra Ball" for Waldemar's benefit.

On Long Island, support for Waldemar was more than financial, it was also emotional. The best evidence of the community's whole-hearted investment in Waldemar is the story of its new building, funded in part by a $272,000 matching grant from NIH. Although the building is estimated to be worth about $1.25 million, it cost Waldemar less than half that much. It was built largely during the course of 108 weekends, with labor contributed free by Long Island trade unions. Furnishings, equipment, and building material were also donated in large measure. To feed the workmen gathered on the weekends, local merchants contributed food and drink, and the ladies came to prepare and serve it. An observer described the experience as "an old-fashioned New England barn-raising." When the building was finished, the ladies took on the additional function of staffing the cancer detection clinic. Waldemar's place in the community never seemed more secure.

Into this rather cozy picture came *Newsday*, the local tabloid read by close to 375,000 Long Islanders. Tipped off by a former Waldemar employee who had been fired from his fund-raising job in May, *Newsday* began an investigation into Waldemar's affairs which culminated in an article in early June. The article made three principal charges: (i) that Molomut and his administrative director Florence Lazere "arranged with Scandinavian Airlines System (SAS) for a $1000 gold-page ad in the foundation's annual Zebra Ball journal in exchange for two airline tickets to Copenhagen . . ."; (ii) that "a Ford Falcon car donated to the foundation two years ago by the Ford Motor Co. to be raffled off at a Zebra Ball actually was turned over to Mrs. Lazere for her private use"; and (iii) that "Dr. Paul Scheman, oral surgeon at Waldemar Cancer Detection Clinic, is conducting his private practice at the clinic, using nurses paid for by the foundation." *Newsday* also reported that some members of Waldemar's Board of Directors had resigned following disclosure to

them of the situation by *Newsday* reporters.

Newsday followed its first report with a series of three lengthy pieces entitled "Waldemar: Behind the Image." The first contrasted Waldemar's claim that 90 cents of every dollar contributed was spent on cancer research with its own finding that "less than 50 per cent and possibly as little as 23 per cent" of Waldemar's 1963 income went to research. The rest, *Newsday* intimated, went to fund-raising expenses, dinners at the Stork Club and other stylish restaurants, lavish furnishings for Waldemar's administrative offices, and other nonresearch items. The second article took *Newsday* into the difficult terrain of evaluating Waldemar's scientific standing, which, it suggested, was not very good. The third article alleged that "the good reputation enjoyed by . . . Waldemar for scientific achievement and financial austerity has been built on blind acceptance of its own publicity releases." *Newsday* claimed that no knowledgeable independent critic had ever taken a look at the institution. Sandwiched in with the larger analysis were a myriad of suggestions of petty wrongdoing.

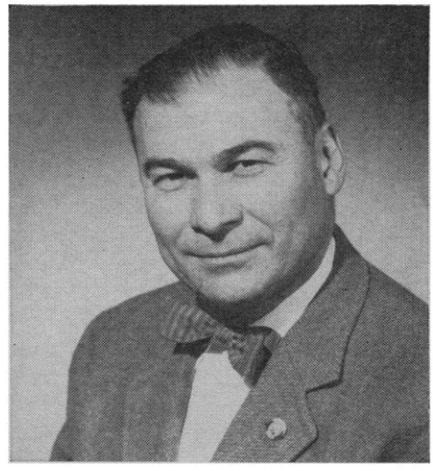
Validity of Charges

Waldemar denies all *Newsday*'s charges. The airline ticket transaction, they claim, was approved by the Board of Directors and netted Waldemar $1000; the Ford Falcon was donated to Waldemar and is used mainly for maintenance, pick-ups, and delivery, with occasional personal use permitted; Dr. Scheman's contract permits him to maintain a limited private practice. Since Waldemar's records are currently before a local grand jury, many of the specific claims and counter-claims cannot be evaluated. However, on some of the accusations that can be evaluated now, it appears that the *Newsday* approach was somewhat misleading.

The article examining Waldemar's scientific stature best illustrates the point. Although the reporter acknowledged that he had received "both highly complimentary and highly derogatory opinions of Waldemar" from the authorities he interviewed, he printed mainly the derogatory ones. Few of the individuals referred to—said to be leading cancer-research specialists and officials of the American Cancer Society and the Damon Runyan Fund—were quoted by name. The results suggest the desirability of instructing the American press not just about science but about the way the scientific community is organized. One anonymous individual, for example, made the following statement: "I would not include Norman Molomut among the people who influence cancer research in this country and Waldemar is not a preeminent cancer research institution, goodness no." To anyone familiar with the sociology of science, this statement would come as no surprise: Waldemar is not among the giants. It is only a little institution that can perhaps most instructively be compared with the average university department of biochemistry. But *Newsday* treated statements suggesting that Norman Molomut was anything less than the Louis Pasteur of cancer research as a sensational revelation. The paper also failed to take into account any of the wholly human motives that may lead one individual to downgrade the contribution of another.

Typical of *Newsday*'s selective approach is its discussion of three scientists of some eminence who were once associated with Waldemar but who now occupy posts at better-known institutions. *Newsday* mistook the natural migration of scientists for a basic dissatisfaction with Waldemar, and used the incidents to illustrate Waldemar's inability to retain first-rate researchers. In fact, two of the individuals in question had come to Waldemar at moments in their careers when, for political reasons, they were unable to find other employment. Molomut, taking advantage of Waldemar's independence, had offered his facilities as a temporary haven. When the pressures lifted, the scientists returned to universities.

Many of *Newsday*'s other arguments were either oversimplified or distorted. Thus, for example, the paper called attention to a system of bookkeeping which showed net, rather than gross income, and which therefore recorded fund-raising costs separately. Whatever the defects of this system (and obfuscation is certainly one of them) it is an approved method in common use among charities. Replying to *Newsday*'s insinuation that this system was deliberately chosen to conceal excessive expenses, Waldemar says that its fund-raising costs average about 10 percent of its gross income. (This is the same figure given by the American Cancer Society. A study of 56 voluntary organizations made in 1961 gives their average expenses for fund-raising and administration combined as 16.6 percent.)



Norman Molomut

The importance of the *Newsday* articles lies not so much in what was said as in how the community reacted: the roof caved in. *Newsday* initiated Waldemar's troubles, but they were fed by two things: an amazing well of subterranean community resentment that had accumulated unseen during all the years of surface harmony, and the failure of Waldemar's loose administrative arrangements to cushion the institution from the attack.

The administrative problems are clear. Members of the board of directors, either locally influential citizens or individuals who were particularly helpful to Waldemar, know very little about what went on there. It appears that for the most part, Waldemar was run by the scientists themselves, as a rather private affair, with a minimum of interference from the outside. When confronted with *Newsday*'s accusations, therefore, members of the board could not comfortably say, "Of course there's nothing wrong." Instead they said "If there's anything wrong, we want to know about it." This only fanned suspicion and made matters worse. They offered relatively little support.

The same is true of Waldemar's outside scientific advisers. For many years, Waldemar functioned with only very casual links with scientific colleagues, and a more formal advisory board was just being assembled when the difficulties began. Thus the scientific advisers are still relatively unfamiliar with Waldemar's programs and have offered little aid. In the absence of any protective links with the outside world, Waldemar faced its onslaught quite alone.

One of the sources of community dissatisfaction was disagreement between Waldemar and the local medical

society over Waldemar's method of soliciting patients for its new cancer detection clinic. The clinic had not been wholeheartedly welcomed by local physicians, in the first place, and the official breach may have discouraged some of them from coming to Waldemar's aid. The main source of community revulsion, however, was the ladies —the very ones who had devoted themselves so forcefully to making the institution a success. Through the Waldemar Councils, the ladies had a certain amount of influence which they exercised first by refusing to solicit further funds, second by withholding from Waldemar funds already collected, third by demanding a reorganization of the foundation, and fourth by pressing for the resignation of Molomut and Mrs. Lazere. The ladies and *Newsday* fell into a kind of symbiosis, each feeding on and sustaining the other.

Did Success Spoil Waldemar?

Why the ladies turned in the face of unproved newspaper allegations is a question involving not only the sensitivities of the ladies but certain attributes of Waldemar.

One explanation is that although Molomut may have taken his success with the women's groups as evidence for his theory that the community could be made to appreciate and understand science, in fact the 6000 ladies were involved for reasons that had rather little to do with medical research. They wanted to "do good" and were pleased to associate themselves with "finding a cure for cancer," but they were also interested in enhancing their status within their local communities. Their attachment to Waldemar had beneath it deep layers of social, psychological, and emotional needs. The ladies appear to have thought of Waldemar as something of a pet, as a place full of darling little scientists who wore mismatched socks, drove shabby cars, ate egg salad sandwiches, and cared not a whit for the material things of the world. Waldemar's increasing financial prosperity—symbolized by the move to the new building—jeopardized this image and offended the ladies as much as it pleased them. But the relationship had begun to erode even earlier, when Waldemar was adopted by the Manhattan society crowd who sponsored the Zebra Ball and contributed as much in a night as the Long Island ladies gathered in a year. The local reaction to this "incursion" was ambivalent; but it had a large element of simple jealousy. A succession of minor incidents made the ladies believe that Waldemar's attitude to them had changed, and they simply felt rejected. It is plain from the unbelievable pettiness of some of the ladies' complaints (one remarked to me: "They used to drink beer; now it's got to be Chivas Regal") that they are possessed by some deep emotion which is in no way conveyed by the words they choose.

The fact that the women feel duped may not be entirely their own fault. An institution does not win support by being overly modest about its accomplishments, and over the years Waldemar probably exaggerated its own scientific standing in order to impress the community. In certain other ways Waldemar appears to have failed—perhaps as seriously as *Newsday*—to communicate to the adult community a sophisticated notion of what science and the life of the scientist are about. An interview with some of the leaders of the women's councils revealed, for example, a deep worry over the fact that Molomut had occasionally given lectures "behind the iron curtain." For whatever reason they were unable to evaluate the charges and believed every word they read in *Newsday*. They hate Waldemar now with a passion that only those who once loved could summon.

What Happens Next?

The ladies' defections and *Newsday*'s articles have had several consequences: The sizable contributions which used to come from the local community are no longer arriving; the board, prodded by *Newsday* and the Councils, is supervising a tentative sort of reorganization which consists mainly of downgrading the administrative functions of Molomut and Mrs. Lazere; and the verdict of the grand jury is being awaited. In Washington, the response of the federal granting agencies involved with Waldemar has varied. Although spokesmen for both the National Science Foundation and the National Institutes of Health say that frequent visits, budgetary reviews, the opinions of their advisory boards, and other information make them confident that government funds have not been misused at Waldemar, the NSF has put a temporary stay on expenditures in connection with a current educational grant. A preliminary audit was undertaken when the trouble first arose in June, but NSF plans to make a more thorough study when the books are returned by the District Attorney. In addition, NSF suggested to a researcher scheduled to come to Waldemar on an NSF grant that she take her study elsewhere, since her grant would come under the temporary embargo on NSF funds. NIH is watching the situation closely but as yet has taken no restrictive action.

A further consequence of the summer's events has been a growing conviction of those associated with Waldemar that it will never recover community support, even if the charges against it are not substantiated. Those who think that the deleterious effects on science generally of such a debacle outweigh the advantages of keeping private laboratories open will be gratified by the decision that has been tentatively made to seek affiliation with a local university or research institution. If such a tie had existed, it is probable that *Newsday* could not have carried its attack so far; but it is also probable that some of Waldemar's rather special contributions—such as providing temporary support for scientists in political difficulties—could not have been made. In any event, it is clear that the federal government, perhaps together with larger private granting bodies such as the American Cancer Society, will have to supply more extensive support if the institution is to be saved from failing altogether and the costly new research facilities preserved. There is no doubt that Waldemar's experiment in establishing close ties with the local community has failed; the community is too fickle. The federal government may have its faults, but jealousy, at least, is not among them.—ELINOR LANGER

Announcements

The National Institute of Allergy and Infectious Diseases is offering **research reference reagents** for several types of virus. They are available free of charge for use by investigators at suitable institutions with problems of identifying new viral isolates, standardizing their own working reagents, or working on immunological relationships between strains. Seed material and antiserum reagents are available for the following virus groups: polio, echo, coxsackie A and B, unclassified picorna, reo, adeno, influenza, parainfluenza, and parainfluenza related. The virus name and catalog number of each available reagent is listed in an index