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THE TROUBLE WITH ALFALFA SPROUTS

by Gar Hildenbrand

¶ Once in a while a topic comes along which is of great interest to ¶
¶ both professional and lay people. When this happens, we tend to ¶
¶ spend time in speculations and explanations which might not occur ¶
¶ in an article intended primarily for scientists. ¶
¶
¶ With this issue, we find ourselves involved with a subject which ¶
¶ requires this type of special care and communication aimed at our ¶
¶ lay readers, and which frankly affords us an opportunity to be ¶
¶ colloquial. ¶

Alfalfa sprouts may be harmful to your health.

Before going further, we would like to make an admission of bias: The author of this article has an inborn aversion to alfalfa sprouts and has never learned to like them.

To take an anti-sprout stance in this day and age is not an enviable task. Alfalfa sprouts have been celebrated in nutrition columns of newspapers and magazines the world over. Well known authors have spoken of them as welcome additions to the cuisine of civilized man. They are found in salads, veggie burgers, and sandwiches from Santa Barbara to Paris.

In the past, when staff members of the Gerson Institute joked privately about the pervasiveness and the (to some) repellent taste of alfalfa sprouts, we knew we were talking heresy. But some of us, this writer chief among the complainers, just did not like the flavor of alfalfa sprouts. It was not uncommon to see squiggly piles of sprouted alfalfa sitting in rejected isolation on the small plate intended for multi-grain dinner rolls whenever the author ate in a health food restaurant.

Recently, the author dined at a restaurant in La Jolla, California. Our waiter was astonished to be told, "Hold the alfalfa sprouts", but after hearing our explanation confided that he,

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Charlotte Gerson, President

personally, did not like their taste either. In fact, he said, during his first days at the restaurant, he had listened incredulously as a fellow employee claimed that it was possible to live on nothing but alfalfa sprouts and adzuki beans. Now he was relieved to have evidence that his future "perfect diet" might spare him chronic encounters with alfalfa sprouts and leave the menu open to more palatable fare.

Alfalfa sprouts are a new age food and very practical in many regards. They are grown from inexpensive seeds which are easily stored in quantity for long periods of time and require only water and a very short growing time to produce a fresh product. Naturally, when the first suspicion crossed our minds regarding their possible role in illness, our reaction was to be skeptical of our own observations.

But several here at the Gerson Institute and from the medical staff of the Gerson Therapy Center of Mexico have become slowly convinced that there is a connection between flareups of rheumatoid (autoimmune) conditions and the quantity feeding of alfalfa sprouts. Some of us are willing to go beyond that to see possible connections between excessive use of alfalfa sprouts and failures in cancer treatment.

The first indication we had that anything was wrong came from observing changes in the condition of patients as they were shifted from the Gerson Therapy Center hospital to another facility which provided extended care. Charlotte Gerson had remarked on numerous occasions that patients of the extended care facilities were simply not doing as well as those in the hospital, and that good cases seemed to deteriorate on moving to the other locations, especially rheumatoid patients. But there were no reasons to point to.

A look into the recent medical literature has confirmed our suspicions. We are grateful to Dr. Kenneth John Baker for bringing key articles to our attention.

According to the literature, until 1980, everything was very much in order for alfalfa sprouts to take a permanent place among the most valued health foods of the world. In fact, it seemed as though they might have specific and positive medical value.

Research scientist, M. Rene Mallinow and colleagues were studying the cholesterol lowering effect of alfalfa seeds in rats and rabbits (1, 2). A new monkey study was in place and clinical trials were initiated to hopefully measure the same effect in humans.



But serious problems occurred during the clinical trials. One of the test patients suffered a swollen spleen, Coombs-positive hemolytic anemia, a positive antinuclear antibody (ANA) test, and fatigue (3).

This in itself might have been overlooked, except for a simultaneous and startling development in the monkey study. Three of five alfalfa seed fed monkeys suffered the same problems: Coombs-positive hemolytic anemia and positive ANA tests. Alarmingly, these animals also registered high titers of antibody to double-stranded DNA, positive lupus erythematosus tests, and, in one case, glomerulonephritis with deposition of IgG and C3 in the glomerular capillary walls (4).

Alfalfa seeds and sprouts, as it turns out, are very rich in an amino acid, canavanine, which can be terribly toxic to man and animals when taken in quantity.

Canavanine alone, added to the

diet will cause the same pathological changes in monkeys and humans.

Canavanine is alpha-amino-beta-guanidoxybutyric acid, a guanidinoxy structural analog of arginine. It is a non-protein amino acid, non-essential to human nutrition which constitutes 1.5% of the dry weight of alfalfa seeds and sprouts. It is not found in quantity in mature alfalfa, apparently being metabolized during growth of the plant (5).

Alcocer-Varela reported (6) in 1985 that L-canavanine sulfate, a non-protein amino acid constituent of alfalfa sprouts, inhibited the generation of suppressor cells. "This suggests that the SLE-like syndrome observed in monkeys and the activation of human SLE by alfalfa both may be explained by interference by L-canavanine sulfate with the immunoregulatory role of T cells."

The question posed by Alcocer-Varela which weighs most heavily is whether any of the other edible legumes carry similar L-canavanine content. Might there be other foods which challenge immunity?

Max Gerson, M.D., writing in "A Cancer Therapy: Results of Fifty Cases" (Gerson Institute, 3rd Ed., 1977, pg. 188) listed beans as foods forbidden in his nutritionally based therapy for cancer. Gerson was a strong observer in clinical changes in patients and built a cancer treatment by trial and error over the course of thirty years of clinical experimentation.

The idea that sprouts might be causing medical problems provided a context for recording and organizing meaningful observations.

Once we had this new frame of reference, things began to fall rapidly into place. We recalled the unfortunate case of a young female systemic lupus erythematosus patient, J.J., age 29. J.J. had responded beautifully in the hospital without prednisone, her most severe lesion healed rapidly

and she was able to gain weight for the first time in years. She felt like a teenager again. Her treatment consisted of the typical Gerson Therapy: fresh raw juices of fruits and vegetables, a saltless, fatless, low protein basically vegetarian diet, with thyroid, Lugol's solution, crude liver and B12 injectable, supplemental potassium, and coffee enemas.

However, after her transfer from the hospital to an extended care facility, J.J. became involved with another patient, R.T., in growing and using sprouts.

For a variety of reasons, although the Gerson Institute did promote the use of sprouts, the Gerson Therapy Center hospital did not make them a central item in the daily menu. However, the extended care facilities did an excellent job of growing and providing all sorts of sprouts, the most plentiful of which were alfalfa. In that environment it was not unusual for patients to grow their own sprouts and to add them to juices as well as salads. The enthusiasm of J.J. and R.T. for sprouts, especially alfalfa sprouts, spread among some of the other patients and to the kitchen. Production of alfalfa sprouts at that facility grew by remarkable proportions.

J.J. would often sit down to a dinner of nothing but alfalfa sprouts (against medical advice) and would juice and drink alfalfa sprouts.

Shortly after transferring to the extended care facility, J.J. suffered an exacerbation of SLE which would not respond to any measures. Gradually, she became intolerant to carbohydrates and relied almost solely on alfalfa sprout salads for her nutrition. Physicians, viewing her rapid deterioration, instituted prednisone which was only marginally effective in controlling her disease. She became very discouraged and returned home. She is currently lost to follow-up.

J.J.'s case is one of many. And it is now readily explained by comparing it to animal models and

clinical trials established for the purpose of discovering more about the negative effects of alfalfa sprout feeding.

Charlotte Gerson reported clinical observations of patients seen at La Gloria Gerson Therapy Center:

"In November 1985, a patient came to the hospital suffering from severe asthma and rheumatoid arthritis. For her asthma, she was using vaso-dilator sprays; and her arthritis was causing her acute pain in her knees, knuckles, and shoulders. She had heavy edema in her ankles.

"With the nutritional therapy, without the conventional drugs and sprays, she had no more symptoms of asthma within the first ten days. Her arthritic swellings came down considerably, pain was reduced, and she was able to walk to a limited degree again. Her ankles were just about normal in size by the end of three weeks and her knuckles were almost entirely free of swelling.

"When she left the hospital, she continued the therapy strictly and exactly with one exception: her diet now included large amounts of fresh sprouts, alfalfa and others, which were also added to her juices. Within a month, her arthritic symptoms were worse than they had been at the start of the treatment. Her asthma was not affected.

"We also recently confirmed the following pattern in a number of cancer patients: First the patients enjoyed a good response while hospitalized. Pain improved or disappeared, tumors became stable or reduced in size, and appetite improved along with the subjective sense of well-being. On returning home they continued taking the therapy. In late Fall, when greens and many vegetables became unavailable, they added large quantities of fresh sprouts to meals and juices. After a period of time, out of character with the prior response to treatment, all experienced either a return of pain or new growth of tumors, or both. Upon returning to the hospital,

their symptoms again abated and, in one case, we have new X-rays showing the tumor decreasing again.

"Another patient who suffered from severe allergies, a 'universal reactor', who had done very well at the hospital, and who also resorted to alfalfa and other sprouts when fresh greens became unavailable, reported arthritic pains in her neck and lower spine. She had had no arthritis for six years. Nor were these 'healing flare-ups', because they didn't go away for six weeks at which time she contacted us again. Of course, we advised her to discontinue the alfalfa and other sprouts."

There is no question now that alfalfa seeds and immature alfalfa contain L-canavanine and that ingestion of sufficiently large amounts will create toxic reactions in susceptible persons. We are obliged to sound an alert to rheumatoid patients specifically, and to reiterate Alcocer-Varela's observation that L-canavanine appears to interfere with normal T-cell function. Alfalfa is an apparently dangerous food and should be on each physician's check list of life-style variables which can be causative of disease.

It is possible that other legumes may come under scrutiny soon. Any specialists in amino acids reading this newsletter are invited to please communicate with us regarding the matter.

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DUES ARE DUE

Members of the Gerson Institute, it's time to "re-member".

Remember that each year the Gerson Institute sends out thousands of information packs and answers thousands of letters at no charge to the requesting parties.

Remember that Gerson Institute staff members spend countless hours with patients and families, research scientists and physicians, in telephone conversations explaining the Gerson Therapy, the Gerson Institute, the Gerson Therapy Center hospital and more. All of these services are provided at no cost.

Remember that we are doing this work for mankind and that in helping us, you can do your part to support the voice of truth in therapeutic nutrition, agriculture, and food processing.

Remember that the Gerson Institute depends on your contributions. Unless you have recently contributed, you are probably one of our many subscribers whose memberships have lapsed. If your membership has expired, please make your donation today.

In order to continue these services, we must appeal to you, our members, to remember us and "re-member" yourselves.

When you make your charitable donations, please don't hesitate to contribute more than the minimum \$12.00 to keep your membership active.

Make a lasting contribution. We are changing the world.

(The Gerson Institute is a non-profit charitable corporation, recognized as an educational organization by both the federal government, 501(c)(3), and the state government, 23701d. Contributions are tax deductible.)

*Note: If you would prefer not to receive this newsletter, please notify us by mail.

FIRE RIPS LA GLORIA - HOSPITAL REOPENS IN NEW FACILITY

A fire of unknown origin raced through the unpopulated central complex of the La Gloria Gerson Therapy Center hospital of Mexico during the early morning hours of January 14th, 1986. The fire gutted an entire building, destroying medical examination rooms, the hospital's computer system, administrative and medical records, the specially outfitted kitchen, dining areas, and lounge.

No employees were on duty in the building at the time. Patient wings are in separate buildings. There were no injuries.

Antiquated wiring is suspected to have caused the fire which is believed to have started in the kitchen. No efforts were made to reconstruct or repair damages.

Patients were evacuated the following day.

NEW SITE OF HOSPITAL IS PLAYAS DE TIJUANA

At a new facility which was slated to open in the spring, construction was speeded up and rooms nearing completion were (See HOSPITAL, pg. 8)

CENTER FOR SCIENCE IN THE PUBLIC INTEREST CRITICIZES U.S.F.D.A. OVER SODIUM CONTENT OF FOODS

Since the Food and Drug Administration began a program to encourage food companies to reduce salt content in their processed products, sodium levels of Stouffers' Frozen Soups have increased by 41%, Van De Kamp's Chinese Classics have increased by 32%, Chef Boy-Ar-Dee Lasagna and Pizza have increased by 30%, and Quaker Oats' Hot Cereal has increased by 24%.

The Center for Science in the Public Interest, a Washington D.C. based consumer advocacy

group, recently surveyed 100 packaged foods to review the effect of the F.D.A.'s program to reduce sodium levels. Of 100 items, 14 had significantly increased sodium levels, and 60 remained virtually unchanged. Only 23 actually had lower sodium levels.

The Center for Science called on the F.D.A. and the federal government to abandon the voluntary program and to establish mandatory limits on the sodium content allowed in processed foods.

LOOKING FOR SOMETHING TO DO?

Feel like writing a letter to your congressman and senators? Here's an interesting topic that surfaced as we browsed through our old clippings and repros:

NEW EVIDENCE SUGGESTS CHLORINATION-CANCER LINK

By Bill Stall, LA Times Staff Writer
(From the LA Times, 12/18/1980)

WASHINGTON- The President's Council on Environmental Quality reported Wednesday that it has received significant new evidence that the routine chlorination of drinking water may be associated with the development of certain forms of cancer in people who drink it.

Chlorine byproducts that develop after the chemical is mixed with the water are suspected of being a potential cause of cancer in the lower gastrointestinal tract, including the colon, the rectum and, to a lesser degree, in the bladder and urinary tract, the (See CHLORINE, pg. 7)

ELEVATED INTRACELLULAR SODIUM AND DECREASED INTRACELLULAR POTASSIUM TIED TO SODIUM/POTASSIUM RATIO OF SOIL AND DRINKING WATER AND TO HIGH REGIONAL CANCER RATES IN U.S..

by Gar Hildenbrand

An important study was recently brought to our attention by Chiu-Nan Lal, Ph.D., of the Section of Experimental Pathology at M.D. Anderson Hospital and Tumor Institute of Houston, Texas.

Researchers at M.D. Anderson have found a link between high rates of gastrointestinal cancer and geographical areas with low potassium/high sodium content in the soil and drinking water.

Importantly, a pilot study with animals has shown the ability of potassium alone to markedly reduce the incidence of chemically induced tumors.

Reporting in Cancer Detection and Prevention 8: 341-348 (1985), Birger Jansson of the Department of Biomathematics at M.D. Anderson wrote:

"Geographic mapping of colorectal cancer rates revealed areas with high rates as well as areas with low rates. Comparisons between high-rate areas and areas deficient in selenium led to animal experiments that showed that selenium could reduce chemically induced intestinal tumors. A low-rate area was found to be geochemically unique with soil and water rich in potassium. This led to a series of studies indicating that elevated intracellular potassium reduces cancer risks, while elevated intracellular sodium increases the risks."

With the support of the late Dr. Murray M. Copeland, Administrative Director of the National Large Bowel Cancer Project (NLBCP), and statistics made available by the National Cancer Institute, Jansson and colleagues determined geographic distributions of gastrointestinal cancer in the U.S..

The upper eastern part of the nation is most heavily afflicted with the disease. This type of cancer is definitely a regional phenomenon, occurring in the

states north of Tennessee and Virginia and East of Colorado and Wyoming for the most part. U.S. counties with highest cancer rates are shown in Figure 1.

the coastal zone over the inland zones, and we expected that selenium, being an anticarcinogen, should steadily increase to the inland zones. Our determination

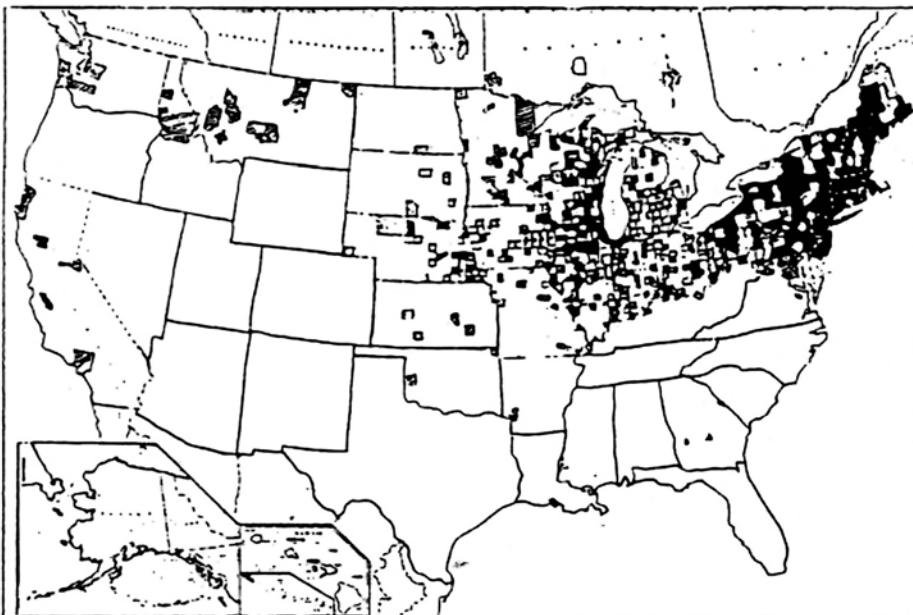


Figure 1. Counties with highest rates of colon cancer appear as solid black. Second highest counties are hatched.

Once cancer rates are pictured geographically, the disease begins to take on characteristics of a typical epidemic. There can be little doubt that the occurrence of cancer in regional populations must be tied almost solely to environmental influences.

Originally, Jansson set out to confirm that cancer rates would correlate to levels of selenium, a known anticarcinogen, in soil and water. However, it was found that selenium levels were actually higher in the areas of highest cancer rates. As Jansson wrote: "(This) observation threw a shadow over selenium as an anticarcinogen. The northeast part of the United States was divided into four equally wide zones parallel to the Atlantic coast and reaching to and including Lake Erie. The colorectal cancer rates are steadily falling from

of the selenium levels in the four zones, however, did not give the results we had expected. The selenium levels were, on the contrary, about six times higher in the coastal zone than in the westmost inland zone, and the points showing cancer rates as functions of selenium levels were almost lying on a straight line increasing from zone 4 in the west to zone 1 in the east (1). It was thus obvious that even if selenium acts as an anticarcinogen, there are other environmental phenomena of still greater importance for the enhancement or prevention of cancer."

Jansson noted that Seneca County in New York State stood alone among its neighbors as having a low GI cancer rate. He first ruled out the possibility that Seneca, where the Mormon Church was founded, still had sufficient

numbers of Mormons to account for lower cancer rates. The Mormon lifestyle has been associated with lower than normal cancer rates for the general population.

However, as Jansson looked further, new data became focal. He wrote: "An observation, which led to a new and interesting hypothesis, was made in 1979 in context with studies of the limnology of the Finger Lake region, in which Seneca is located enclosed between two deep glacial lakes. It was noted that these two lakes, which penetrate underlying salt strata, have potassium plus sodium concentrations that are about 10 times higher than in the other Finger Lakes and in New York State in general (2). It was also found that the proportion of potassium in the sum of these two elements is high. This observation initiated a number of geopathologic studies. Cancer rates in areas with salt lakes, salt plays, and so forth, with high potassium concentrations, were compared to ones in nonsalty neighboring areas, and it was noted that the areas with high potassium concentrations in water and soil were areas with low cancer rates."

Max Gerson, this century's pioneer in high potassium/low sodium therapeutic nutrition, had suggested in the 1950s that, according to his clinical experience a high potassium/low sodium diet with supplemental potassium would protect against the development or recurrence of cancer (3) but his ideas were not seriously entertained at the time. Jansson's efforts now offer laboratory confirmation of Gerson's clinical observations.

In summary of his recent experimentation, Jansson wrote: "These geographic observations were followed by a number of dietary studies that confirmed that diets high in potassium and low in sodium were associated with low cancer rates (4, 5). Similarly, it was noted that in aging, potassium leaves and sodium enters cells, which might explain the higher cancer rates in older people; in high altitudes the acid-base balance changes in a

way that increases the potassium and decreases the sodium levels in cells, which may explain the observation of lower cancer rates at high altitudes than at sea-level. This might also partly explain why the Atlantic coast area has higher cancer rates than the mountainous New England inland. Patients with diseases associated with low intracellular potassium concentrations are at increased cancer risks, eg, those suffering from obesity, Cushing's disease, Crohn's disease, alcoholism, and so forth, while patients with diseases associated with high intracellular potassium concentrations are at reduced cancer risks, eg, those with Addison's disease, Parkinson's disease, schizophrenia (6). The low cancer risk for patients with Parkinson's disease was recently confirmed in a retrospective patient-record study (7).

"In a pilot study, Jacobs (8) has shown that potassium added to the drinking water of DMH-treated rats reduced the incidence of colon tumors from 90% to 60%, of small intestinal tumors from 40% to 5%, and tumors of the Zymbal gland from 35% to 10%.

SIGNIFICANCE OF THE FINDINGS

Freeman W. Cope speculated that high potassium/low sodium diets exert an anticancer effect by providing a more stable intracellular environment in damaged cells (9). As Dr. Cope wrote, "Tissue damage, from any cause and in any tissues, produces a similar set of changes in tissue salt and water, which Cope (10) has called the "tissue damage syndrome". This pattern is clearly shown in experiments by Ling and Ochsenfeld (11) with muscle poisoned by Iodoacetamide and has been discussed from the above point of view by Cope (12). The most easily observed components of the tissue damage syndrome, as seen in the experiments of Ling and Ochsenfeld (ref. 11, fig. 1), are decreased cell K, increased cell Na, and increased cell water (cell swelling or tissue edema). The conceptual pattern responsible for these observed changes, conceived first

by Ling (13) as part of his association-induction hypothesis, is as follows:

"The proteins of the cell are able to exist in either of two different configurational states: a normal configuration, and a damaged configuration. The two different protein configurational states induce two different sets of water structuring and cation association states. In the healthy cell, the cell proteins have their normal configurational state in which negatively charged sites on the protein matrix have a large preference for association with K rather than Na, and cell water is highly structured so that its solubility for both K and Na is low. The result is high cell K and low cell Na concentrations. The ability of the cell proteins to stay in the normal configurational state is dependent on the integrity of the cell (freedom from chemical or physical damage).

"In the damaged cell, the cell proteins change to the damaged configurational state. In that state the cell proteins lose their preference for association with K rather than Na, lose much of their ability to structure water, and probably lose their contractility, with the result that K leaves the cell, is replaced by Na, and the water content of the cell increases (the cell swells) (11).

"The high K, low Na diet of the Gerson cancer therapy is a logical strategy for improving the health of the body tissues, of which probably all, and certainly the liver, are suffering from the tissue damage syndrome, some components of which were observed by and recognized by Gerson" (3).

A number of studies have shown the ability of high potassium environments to promote differentiation of a variety of cells: neuroblastoma cells (14), Friend erythroleukemic cells (15), 6m2 cells (16).

A possible mechanism for this observed effect was forwarded by Cope: "In the damaged or partly damaged cell, the cell proteins

lose all or part of the preference of their sites for associating with K rather than Na. Nevertheless, a competition between K and Na for these sites still exists. Therefore if in the environment around the cell the concentration of K is increased compared to Na, the association sites are forced to accept more K and less Na because of the cooperative interactions between association sites, as shown by Ling and Bohr (17). This tends to restore the normal configuration of the proteins. Therefore treatment with the

Gerson diet to increase tissue K concentration and to decrease tissue Na concentration is a logical therapy for the tissue damage syndrome in the cancer patient."

Jansson's statistical findings and the results of his experiments suggest that a serious, intensive, and broad scale effort to discover and appreciate the significance of cellular sodium and potassium concentrations should be made in the research community. He noted: "These results and observations, togeth-

er with reports in the literature indicating that vitamins A and C, fiber, and other elements, increase the intracellular potassium concentration and decrease the intracellular sodium concentration, while fats in the diet, for example, have the opposite effect, support an hypothesis suggesting that intracellular potassium decreases cancer risk, that intracellular sodium increases this risk, and thus, that the intracellular potassium/sodium ratio is negatively correlated to cancer risk."

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CHLORINE (from pg. 4)

The major uncertainty in the new studies is not so much whether the chlorine causes cancer, but how much it causes, said Dr. Robert Harris, council member. The investigations suggest that the risk of getting lower gastrointestinal cancer from the chlorine in treated water is twice as high as it is for unchlorinated water, he said.

ONCE MENTIONED, EASILY FORGOTTEN

After the above story appeared, there were no other reports issued. The Gerson Institute recently contacted the President's Council on Environmental Quality. (See FORGOTTEN, pg. 8)

quickly made functional to accommodate patients.

The new facility, which is situated a block from the beach with an unobstructed view of the ocean, was chosen by the managing physicians of the Gerson Therapy Center in the Fall of 1985.

In November of 1985, administrators of the Gerson Therapy Center had announced their decision to relocate to Playas de Tijuana on the coast.

Physicians point out advantages of the new facility over the La Gloria Hospital, noting that all of the rooms have windows opening to the outside, and that the entire facility is integrated with covered walkways. The closed courtyard provides seating under shade plants. The central dining room, which is no more than 100 feet from any of the patient rooms, has a direct and striking view of the ocean.

The new hospital provides expand-

ed patient facilities with three additional beds, a total of 31. The move also finds the hospital in a new telephone exchange with much improved, clear connections. Physicians say that, in spite of the added costs in replacing equipment and records destroyed in the fire, that the move to the new hospital is a good one.

Under the official name of Hospital de Baja California, the medical group has been granted a license in the new status of experimental hospital. This new federal recognition assures the hospital a more comfortable relationship with local and regional regulatory agencies.

The seaside facility will be named shortly, pending approval by the government of submitted suggestions. As in the past, the Gerson Therapy Center is an open campus. Visits by professionals and interested laymen are encouraged.

We were informed by a spokesman that the chlorine-cancer study occurred just before an election in 1980 and that the Council was considerably smaller now. The spokesman said it was a certainty that no further research had been done regarding the chlorine-cancer link.

If, as the President's Council on Environmental Quality has suggested, chlorine in drinking water causes bowel cancer, this fact must remain before the public eye. We suggest that you write your representative, your state senators, and the President to remind them of the need for concern, for further study, and for action.

DID YOU REMEMBER TO RE-MEMBER YOURSELF? PLEASE SUBSCRIBE NOW.

IN THE NEXT ISSUE WE'LL BE REVIEWING SONNY KLEINFELD'S NEW BOOK, "A MACHINE CALLED INDOMITABLE", THE STORY OF RAYMOND DAMADIAN'S INVENTION AND DEVELOPMENT OF MEDICAL MAGNETIC IMAGING.

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