CRYONICS

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EDITORIAL MATTERS

In the October issue of CRYONICS we included a copy of a DURABLE POWER OF ATTORNEY FOR HEALTH CARE form for use by California residents. Unbeknownst to us there is a separate (but accompanying) part of the legislation which requires that the "warning"

at the front of the form be printed in 10 point boldface type! (No, we're not kidding, this is for real -- just leave it to the bureaucrats!) The form is not valid unless it has the warning printed in 10 point bold type.

Unfortunately, when we reduced the size of the form to print it in CRYONICS we went below a 10 pt. type size on the warning. So, if you've filled out the form that was included in CRYONICS you need to destroy it and re-execute a full sized form. If you are a California subscriber, you have already received a full sized copy of the form along with an explanatory cover letter. Non-California residents cannot execute the form "as is" anyway, so for them it's not a problem.

We apologize for any inconvenience this may have caused. We don't feel too bad about this one, since we understand that this was an error made by Nolo Press, one of the largest publishers of self-help legal manuals (and Nolo is largely run by California attorneys!)

Our thanks to attorney Jack Zinn for bringing this problem to our attention.

EMERGENCY SYSTEM UPGRADE

As most of you know, we've been trying to upgrade our Emergency Response System on all fronts. With great difficulty we've been endeavoring to locate a reliable vendor for emergency ID tags which are both larger and more readable than either our current or former tags. We also plan to an add another beeper, bringing to three the number of people on-call at any time.

We are now offering the new bracelets and neck tags for sale. The new tags are a lot more visible and a lot larger than the ones we previously offered. We also think they're a lot more attractive. We plan to offer them in addition to our current ER tags. We are doing this because the tags may not be suitable for everyone. So far, virtually every woman who has examined the tags has rejected them out of hand: they are big, over three inches long, a little over 3/4 of an inch wide and made of heavy stainless steel. For most feminine wrists the tags are simply too large.

The tags also come in a neck tag version which should be more suited to feminine wear. However, not everyone likes neck tags, and women often wear other jewelry around their necks. The best solution is to offer a range of products and let you choose. This is what we intend to do.

The accompanying pictures show what the new tags look like. The message is as

follows:

MED HX. CALL COLLECT 24 HR.
714 738-5569 WILL PAGE.
IN CASE OF DEATH SEE
REVERSE FOR BIOSTASIS
PROTOCOL. REWARD A-XXXX

CALL # NOW FOR INSTRUCTN
PUSH 50000 U HEPARIN IV
DO CPR WHILE COOLNG WITH
ICE TO 40F. KEEP PH=7.5
NO AUTOPSY OR EMBALMING.

As you can possibly tell from the message above, we have declared Steve Harris the winner in the ER message contest.

If you are an ALCOR Suspension Member and you want to order one of the new-style tags you may do so by sending us a check for $20.00 and telling us that you want to order either a neck tag or bracelet. New Suspension Members will have their choice of one or the other (instead of our current standard issue of both) at no charge.

On another front, we are also now offering microfilm wallet cards. A facsimile of this card is reproduced at the right. The card will contain two pages of microfilmed personal identification and medical history information, a treatment authorization requesting and authorizing your

physician to carry out bio-stasis stabilization proced-ures, and two additional pages of Emergency Instruct-ions For Stabilization and Transportation of Biostasis Patients.

This latter document will be especially helpful in an emergency since it contains the detailed emergency stabilization protocol: drugs, dosages, cooling procedures. and a brief description of rationale for their use. This is the kind of information which it is nearly impossible to give a physician over the telephone

in the heat of an emergency.

> Most hospital Emergency Rooms have microfilm readers these days, since the poison control library of information is packaged in this way. The medical records department also usually has a microfiche or microfilm reader.

We now have production of the cards totally in-house. The story of how we managed to do this is a long and funny one (at least if it didn't happen to you, it may be funny) which alas, we cannot relate in full here. Suffice it say that we decided to bring production of cards under our complete control in order to guarantee confidentiality for our members. ALCOR maintains strict confidentiality about suspension arrangements and medical histories and it is not possible to rely on outside agencies to handle this information during operations like microfilming or laminating of ID cards.

Regrettably, producing the cards turned into a technical nightmare. The printing of the cards, microfilming, and mounting of the film was easy enough. But lamination, which we thought would be the "easy" part, turned out to be anything but easy. We had persistent and costly problems with bubbles on the the film which obscured the microscopic print. Needless to say none of the services who market such cards would tell us the way around this problem. Additionally, the film system used by the one or two commercial providers of similar services was very different from ours.

After many, many hours and hundreds of dollars we did solve the problem. How? We're keeping that as a trade secret!

Cards are available to ALCOR Biostasis Members at a charge of $7.50. If you want one, send us along a check or call us on the 800 number and charge it (800 367-2228) to receive the Medical History forms. Please allow two to three weeks for delivery (we have to "gang" them together for processing to hold down film costs).

We think the new bracelets and especially the new wallet cards are major improvement in the quality of the emergency response system for ALCOR biostasis members.

CRYOLINK?

By cryonics standards, ALCOR is growing pretty fast. We're up to 84 Suspension Members and we're adding a fairly steady three people per month. (Last month we had a bumper crop: six!) But we're not only adding people, we're adding quality people. As one of our newer members pointed out, ALCOR is the activist cryonics organization.

A consequence of our growth in quantity and quality has been that some days we feel like a telephone switchboard. People call with ideas,

suggestions, plots, and schemes, as well as for advice and information on problems which are of special concern to them. This is at it should be.

Sometimes we try to cross connect people to each other in mutually beneficial ways. The problem is, it's hard to make those cross connections without missing a few. We can't know what interests everyone, and while CRYONICS magazine is a forum for people to communicate and cross pollinate, it suffers from that dread enemy of all formal communication: it's slow and it's somewhat unresponsive. It's hard to get a rapid fire dialogue going when you have to wait 30 or 60 days for a response. The element of "real time" interaction, which is so important in communication is missing.

There's also the problem of decorum. We don't mean that in any snooty or prudish way. Sometimes people have an idea which they'd like to spread the word about, but which we simply can't endorse by putting it in the magazine. Home buying services or food co-ops, a political position, or even just a good wholesome movie to go to see are all examples of things that aren't relevant enough to be discussed in the magazine. Establishing correspondences is a way around this problem to some extent, but the mails are slow and including lots of people in a correspondence in a way that allows for easy interaction is next to impossible.

So what's the answer? Well, we think Thomas Donaldson has come up with one. At the Lake Tahoe festival we asked for a show of hands of people with computer backgrounds and noted that ALCOR has a disproportionately high percentage of "computer people" in its rank and file. We also surveyed computer ownership and modem ownership. A surprising number of people present owned both computers and modems.

What does this mean? Well, Thomas Donaldson has come up with a brilliant idea with a great deal of potential. How about a cryonics bulletin board: a place where folks can interact with each other, post notes, send each other electronic mail, exchange recipes, suggestions, jokes, and life saving information?

We know the demand is there. Our phone log and the kind of calls we get indicate we've got a crowd of zesty, active people who are bubbling over with

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ideas. Now, we've potentially got a way to put them together.

We've been informally calling the proposed bulletin board Cryolink. We already have the lion's share of half of what it will take to make Cryolink a reality: a dedicated computer, hard disk, autoanswer modem, bulletin board software and a place to put the whole assembly. Thomas has agreed to set the system up and get it running.

The other half is something we hope you have: a computer, a modem and the interest to use the bulletin board.

We'd like to hear from you on this one. Would you use Cryolink? How often? Is this something you think we should do? Now's the time to let us know.

LETTERS TO THE EDITORS

To the Editors:

As someone who spent 15 years living outside the United States, traveling in Asia in my spare time, I thought I'd add some comments to Mike Darwin's article, A World Gone Wrong (July, 1986 CRYONICS).

First, I completely agree with Mike that there are some vile opinions going around. The opinions to which he refers, however, have had vocal adherents as far back as the 50s (which is as far back as I personally remember, although older readers will certainly remember even farther back). The idea that we ought not to strive for immortality because "there are still starving people" is really an expression of envy. If these guys really believed what they said, then they could easily give up some of their own comfort. The fact that we cannot shake their opinion by pointing out this fact simply proves that their "official" reason for holding it is different from the "real" reason.

I don't know myself whether or not there is any trend toward greater adherence to such opinions in the United States. That is the really important issue. Without actual statistical research it would be hard to check.

But okay, let's suppose that there is such a trend. Anyone who becomes a cryonicist should keep in the back of their head the thought that when they come back the United States may no longer be a leading country in any respect. These things happen. Spain was once the leading world power. The fact that a large proportion of the world's people speak Spanish is one of the reminders of this time. But the Spanish blew it long ago. We should always keep in mind that the Americans may blow it just as much.

But there is more. The United States just isn't the only repository of our highest ideals. Furthermore, countries which are now of no account can turn, in 200 years, into beacons of freedom. Stranger things have happened. What this means is that we should not attach our personal fate and the fate of our suspensions too closely to the United States. The United States may blow away but we ourselves not only survive but prosper.

Do not be surprised if upon your revival Zaire is a leading scientific and industrial power (far in advance of anything now!), if the Soviet Union is a bastion of freedom and capitalism (of course renamed "communism"), if the United States has dissolved into a collection of petty underdeveloped

dictatorships with a purely titular President and Congress, and if American students get scholarship to study the latest science in Guatemala. We've all embarked on a long ride into history. . .

Thomas Donaldson
Sunnyvale, CA

Dear Mr. Darwin,

An interesting article appeared in SCIENCE, (232, 1029 (June 27, 1986)). This research demonstrated that aminoguanidine can prevent the non-enzymatic cross-linking between long-lived structural proteins, like collagen, that occurs during normal aging (and at an accelerated rate in diabetes mellitus). This cross-linking depends on the presence of sugar (glucose) in the blood stream, and consequently in the extra- and intra-cellular spaces of the body. The glucose molecule can form aldimine (Schiff's base) bonds with the amino groups of proteins. The aldimines spontaneously form ketoamines by what has been known as the Amadori rearrangement, which in turn leads to cross-linking between and consequently damage to the native proteins, in this case collagen. These investigators demonstrated that aminoguanidine (a nucleophilic hydrazine compound) can effectively prevent the formation of these cross-linked bonds both

in vitro and in vivo (the aortic wall of diabetic rats). This research is important to the readers of CRYONICS, who wish to prolong life by reducing the damaging effects of aging. This drug may be a step in this direction, although the toxic effects of its ingestion are largely unknown. Eating less and thereby keeping blood sugar low would be another less satisfying and less effective substitute anti-aging regimen.

Peter Gouras, M.D.
New York City

THE OMNI AFFAIR

The OMNI article is out. At least in terms of short-term benefit the results are in -- there don't appear to be any: not a single call requesting information. But then, we knew better than to expect much.

But that doesn't mean there haven't been some interesting results. There have been, and in a quite unexpected way. It seems that OMNI has a computer bulletin board on the CompuServe computer network. It's called the OMNI FORUM and it allows OMNI readers to write commentary about articles, share and exchange ideas and interact directly with the OMNI staff (see "Cryolink" elsewhere in this issue for details on computer bulletin boards).

ALCOR Associate Member Brian Wowk of Manitoba, Canada wrote some commentary on the OMNI article. Basically, Brian thanked OMNI for opening some dialogue on the issue of cryonics and neuropreservation, but he also had a number of cutting observations and criticisms about the article.

A dialogue with other forum members ensued. One of the OMNI Forum participants was a fellow named Thomas Donaldson (need we say more!). The

fat was in the fire. The debate got going (and is STILL going) and when Brian last sent us a dump of hard copy the debate had raged on for 36 pages!

It is an interesting debate. To sum it up: it's really hard to believe that "educated" people can be that stupid. In most ways the dialogue is exactly like all the other dialogue about cryonics you've engaged in. There are, of course, several different brands. There's the Fundamentalist Christian Brand (concentrating on religious issues/the soul); there's the Educated Liberal Guilt Brand (these people don't have souls, but they don't have any self image either -- we're all worthless toads who have to live for each other); the Pompous Scientist Brand (I'm the expert and I say dead is dead); and the Aging Hippie Brand (natural order, overpopulation, no nuclear power). All of these brands of argument boil down to one basic thing: absence of self worth. And does it ever show in that dialogue! That's what makes it so interesting. The printout actually captures these arguments so you can sit down and really look at it. The deathism and lack of self worth in most of the participants is shocking.

We're trying to get permission to print parts of this dialogue in CRYONICS. If nothing else, perhaps we can persuade Brian Wowk, who has argued so articulately and forcefully for cryonics and ALCOR, to write up an account and summarize his arguments. Nothing can convey the full flavor of the entire

printout. But, all things considered, that's probably just as well -- unless you want to get depressed.

ALCOR President Mike Darwin submitted the following letter to the Editor of OMNI, with permission for publication.

Dear Editor,

Paul Bagne and Nancy Lucas have written a well crafted and thoughtful article on cryonics and cryobiology. They got their facts right -- but missed what we cryonicists are all about almost entirely. Souls On Ice reads a little like an article ostensibly written about a fiercely competitive football game which concerned itself almost exclusively with what the fans in the stands were eating and wearing.

Paul Bagne sums up the problem in his comments which appear in the "Omnibus" column in the front of the magazine: "I'm still unable to reconcile their relationships with their clients. They (the cryonicists) talk about this loving rapport during life... Then they turn around and nonchalantly decapitate the person, saving just the head, which they say will eventually regenerate another body." If Bagne can't get beyond that point, then he's gotten almost nowhere.

Let me try to communicate what Mr. Bagne and Ms. Lucas would not or could not. It is a simple message and a very powerful and important one: We are our clients. Cryonics is not some commercial service which ALCOR delivers to third

parties. Cryonics and ALCOR exist because we need it for ourselves and for those we love. I am glad that I do not have to depend upon Mr. Bagne in an emergency. I wonder if he would allow his squeamishness to interfere with tourniqueting or even amputating the mangled or gangrenous limb of a loved one if he were remote from sophisticated medical care and it meant the difference between life and death?

The history of the human race and of civilization has been made by people who could squarely confront reality -- even realities as unpleasant as death and disease -- and

overcome them successfully. Whether we like it or not, we are all growing older and we are all, at this time, at terrible risk of dying. Viewed one way, our situation is particularly wretched because we can now see so clearly that in the long run aging and death as inevitable certainties will be vanquished. How sad to have been the last generation to have died!

Cryonicists prefer to view the world from another perspective -- one of optimism. It is very clear that existing cryonic techniques are effective at preserving the overwhelming majority of the molecular structure of our bodies. It is also clear that despite such preservation, a lot of damage goes on. We are realists and we understand that any technology capable of reversing the injury due to the aging process and current, unperfected freezing techniques is going to be equal to regeneration or regrowth of a new body. After all, making new bodies (and even new brains!) is the one thing we are pretty good at already -- we do it every time we give birth!

Cryonicists don't find it too farfetched that we will bring that process under our complete control before we have the molecular tools and ultraminiaturized repair devices required to overhaul and repair damaged cells. And even if we don't reach that milestone before the advent of full-scale molecular engineering, the development of a mature molecular technology implies the ability to fabricate or regrow healthy new bodies.

The only thing we can't hope to replace in the future is our minds and memories. The information contained in our brains is priceless and precious. It alone matters -- not our worn-out hands and feet, or our other parts for that matter. Economics and good biological care of the brain argue strongly for its selective preservation. We refuse to let squeamishness or the poor judgment of others force us into carrying out procedures which are costly, irrational, or otherwise counterproductive. If that's the "relationship" Mr. Bagne has trouble

understanding, I feel sorry for him: his life is likely to be both short (by our standards) and troubled.

It has been said that space is the final frontier. It is not. Expanding our own futures, extending our own lives, that is the final frontier and the only truly endless one. Cryonicists do not intend to shrink from that frontier. That is the true mark of a pioneer. It's unfortunate that Mr. Bagne will probably not be there to share the future with us when we cross the final, rocky summit and see an open-ended world of possibilities waiting before us.

Sincerely,
Mike Darwin
President, ALCOR

ALCOR AT WORLDCON

by H. T. Watcher

The 44th World Science Fiction Convention was in Atlanta this year, and ALCOR activist Keith Henson was in the thick of it, expounding on nanotechnology, cell repair machines, and cryonics, from several panels and from any soapbox he could find. The Life Extension: How Far Can You Go? panel was well attended (100+) and an opportunity to hand out ALCOR brochures, aided by ALCOR stalwart Jerry Cullens. Jerry was quick to respond to an audience question in the form of an accusation that cryonics was elitist, with a most effective squelch. Keith's only regret was not taking a hundred copies of Engines of Creation. Mike Darwin reports several inquiries from the Southeast, normally an area that shows little or no interest in cryonics.

ConFederation (as it was named) was held in two hotels, of which one, the Marriot, boasts a 600-foot-high atrium. For the acrophobe, it has glass elevators open to all that space. Put into space and spun, the hotel would have been a fair approximation of an O'Neill space colony. The open space was large enough to hang a complete Saturn 5 inside for a mobile, which would have been much more interesting than the cloth streamers that looped down about 40 floors.

On Saturday afternoon the hotel management decided that the paper airplanes had to be cleared off the streamers, so the fans got a demonstration of free-rappeling.

There is nothing quite like the gathering of several thousand science fiction fans, even in a more conventional place. While there are serious program tracks, and traditional events such as the Hugo Awards and a marvelous masquerade event, WorldCons (and North American Science Fiction Conventions (NASFiC), when WorldCons are held outside the USA) are primarily stay-up-most-of-the-night, very enjoyable, low-key parties.

In spite of incredibly bad responses toward cryonics from two major science fiction authors (Fred Pohl and Robert Heinlein) who have been approached about it, SF fans seem to have a relatively positive attitude toward cryonics, especially when coupled with news about the fast-approaching nanotechnology revolution. Of course, that revolution makes dying in the last few years (or at the most, decades) before it hits a

particular waste.

Henson actually managed to talk briefly to Fred Pohl, the first cryonicist contact made with Pohl since he was upset years ago by the offer of a free suspension. Pohl's comments were to the effect that he doesn't believe that cryonics will work, but doesn't want to disturb anyone else's belief that gives them comfort. From both his fact writing and his discomfort, it is easy to see that he does believe, but can't face the consequences of its working. Weird.

Next year a NASFiC will be held in Phoenix. ALCOR is planning to be there in force, with a booth if possible and running a program on cryonics and nanotechnology. If you want to help, let Mike or Hugh know.

UNDERGROUND SCIENCE: AN ESSAY ON THE DENIAL OF KNOWLEDGE BY PUBLIC OPINION

by Thomas Donaldson

> I have therefore found it necessary to deny knowledge, in order to make room for faith.
>
> -- Immanuel Kant (1787)

To cryonicists, the nonacceptance of cryonics by the general public is very troubling. In the course of my reading on the history of science, I have come on another idea, commonly accepted today, that at its inception was received with even greater hostility. The similarities between cryonics and the introduction of the concept of evolution are quite interesting.

Noncryonicists will almost certainly consider this essay totally biased and delusive. It assumes, you see, that cryonics is right and moral. To noncryonicists, this is outrageous. I'm not writing it to offend noncryonicists because they won't be reading it. And I thought that it might bring cryonicists some real understanding of the world they live in.

Objectively seen, this world is very strange. Many people buy and read magazines devoted to health: SELF, PREVENTION, HEALTH, RUNNER'S WORLD, and many others. Many people are concerned by risks due to pollution, nuclear power, carcinogens in their air and water. . . Most newspapers discuss this every day,

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in the women's columns (for some reason, men don't age!). Every day on our television sets a citizen's group besieges its local officials. The local government has somehow allowed a pollutant into the water. Everyone's risk of cancer

has increased by 1 part
in 1 million. The
people are outraged.
The newsbrief shows us
the water shelves of
the local supermarket, stripped bare by anxious shoppers. In the hospitals, meanwhile, where the newsmen don't go (except of course for a news conference in which some new medical advance is announced) people routinely die prolonged deaths. The principal cause? Old age.

One would think that with all this interest in health some obvious conclusions would be publicly drawn. One would think that researchers would have zeroed in on aging as the major problem. One would also expect that cryonics would receive serious consideration. Certainly, there are many emotional barriers to considering cryonics. But there is also an answer there, perhaps not to the question asked but to the question that ought to be asked. But it isn't even necessary to bring up cryonics in this connection. The attitudes to aging research are alone significant enough.

"There is the significant event of the dog barking in the night.

"But the dog did not bark in the night!"

"Exactly, my dear Watson. That was the significant event."

Despite the tremendous market for drugs, skin creams, magazines, and health aids of all kinds, every one of them devoted to aging, the actual financial support given to aging research remains very low. All of these magazines concentrate on superficial and palliative techniques. What this means is not that these techniques are totally ineffective, but that the outpouring of public interest never rises to the level of any explicit general understanding. No one reading these magazines thinks beyond this interest to what it may mean. They content themselves with using whatever means happens to fall to hand, but never organize together to try to speed progress with their problem.

To see how paradoxical this is, let's consider muscular dystrophy as a counterexample. Yes, patients do think about pallative treatments. But both they and their relatives have also formed an organized pressure group. They collect funds for the Muscular Dystrophy Foundation. They educate people in the problem and what can be done. They form groups to support one another in their suffering. They actively support research aimed at an understanding and a cure.

Public interest in aging is disorganized. There are no public figures articulating a movement. There are only isolated individuals, each of whom

discovers the problem anew for themselves, and tries to do something about it as an isolated individual.

But that's neither the full extent nor the explanation of the matter. Within the "public" there are some people with great wealth. These people have the same problem with aging, and their strivings are also suppressed. Here is how it happens. Not just once, but many times I have heard of wealthy men who start to become interested in aging and even cryonics. But they don't approach cryonicists or aging researchers. They have to hear

about us first, and then have to believe that we are worth listening to. But that is exactly what doesn't happen.

What does happen is that the rich man hires an ordinary citizen to do research for him. This citizen, not being interested in the problem for himself, must go through many barriers. First, they are never "qualified." In fact, a major part of their problem is to find qualified people. And of course, qualified people have also gone through their own selection methods in becoming qualified: it becomes like hiring a member of the Communist Party to study communism. And qualified people cost far more. Second, they have to worry about pleasing their employer. If they tell him anything they think he will think too incredible or too hard, they run a risk of being fired for being too credulous. Too incredible: that is cryonics (of course!). Too hard: that is that there is no easy solution, not easy in any sense of the word. Simply spending money will not guarantee an answer. The easiest course is to exercise self-censorship. Don't tell the old man anything you think he won't be able to take. And to preserve self-respect in such a situation, of course you don't even start believing anything you think the old man won't be able to take.

Nor is this a process from which the public in general is immune. Magazines are written to sell. They are not written to offend their readership. Authors in such magazines are much like the "researchers" hired by the wealthy.

> The end result of this is that whatever our status, the failure of imagination in "our" researchers (and even in ourselves), causes us to be lost in individual striving. The answer is there, but we are somehow prevented from believing it.
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> There is only one thing which can produce such a pattern of fragmented individual striving. Censorship. Cut people off from communicating with one another about their problems and they will be silenced. They will all have to find their individual solutions. They will even have to find out the problem for themselves. I don't mean there is an actual Board of Correct Thoughts which assesses what people should hear about. They are only so official about it in the USSR. Most American censorship is self-censorship, for fear of what others will say (and of course self-respect requires that you believe it!).
>
> As a real and relatively recent example, there is a historical shift in scientific beliefs that shows many similarities to cryonics. It's one most people

nowadays would accept without question. That is evolution. Since as usual history has been thoroughly rewritten by the consensus of the victors and the vanquished to minimize their embarrassment, I'll summarize what really happened.

To understand the conflict that raged, it is, first, very important to understand that the idea that human beings evolved from lower animals absolutely outraged "public" opinion. It offended the Church in England

(which was the major stage for the conflict), and thus offended all the leading creators and disseminators of opinion. And second, we have to distinguish the idea of evolution (which by now has tremendously strong scientific support) from the idea of natural selection, which Darwin invoked as the mechanism for evolution. Natural selection was validly criticized at the time, and even now isn't accepted as the whole story by respected scientists working in the field. It is a theory of mechanism, not a theory of what happened.

Now, the real effects of self-censorship are extraordinarily pervasive. We will never know what people said in the privacy of their bedrooms, because even there they refrained from voicing their own opinions (if they had them). But the concept of evolution as it was fought out had precursors, and their fate is a matter of record. Lamarck (1744-1829) developed a theory with startling resemblances to evolution. Some point to him as a precursor of Darwin (1809-1882). The important point about Lamarck was not, however, his influence at the time. Lamarck had no influence at the time, and died in obscurity. Erasmus Darwin (1731-1802), Charles Darwin's grandfather, put forward Lamarck's theory of evolution in only one chapter of his book Zoonomia and never argued publicly for it. His works of scientific poetry were much more popular than his Zoonomia.

James Hutton is another precursor, and his reception shows us much more about what was really happening. Hutton was a geologist of the 18th Century, and was the first to realize the antiquity of the Earth. He studied the rocks of Scotland and could reach no other conclusion. His belief in the great age of the Earth, however, convicted him in the eyes of most right thinking people. His ideas were rejected by most geologists of the early 19th Century on grounds of.... Atheism. They barely escaped complete oblivion.

We have another even better example: a fully worked out theory of evolution published 15 years before Darwin. E.K. Chambers was an independent Edinburgh publisher (not a coincidence!). In 1844 he

published anonymously a synthesis of geology and biology titled Vestiges of Creation. This is an outrageous, important book, condemned by all.

We must distinguish. Chambers clearly espoused the idea of evolution, but his notion of mechanism wasn't Darwin's at all. But that doesn't matter. Chambers very clearly proposed that human beings evolved from lower animals. He had an understanding of the progression of life which came close to our own. But the scientific and religious establishment condemned his book on all sides. Many periodicals published reviews condemning its crude materialism. The Edinburgh Review published a long review urging that "we protect our glorious maidens and matrons" from such poisonous ideas. Even Huxley, who later argued very forcefully for Darwin's ideas, wrote a critical review.

When Chambers wrote, the fossil record wasn't nearly so good as 15 years later. I am powerfully reminded of Ettinger's "The Prospect of Immortality." As with Ettinger, opponents seized upon gaps in scientific knowledge to criticize the book. I believe that none of these objections to Chambers really had weight. Opponents wanted to believe something else and sought eagerly in science for grounds for their belief.

Chambers could publish his book anonymously because he was a

publisher. Ettinger first published his book privately, paying for it himself. Chamber's book contains errors of fact (who does not make mistakes?) which of course its opponents seized on with great enthusiasm. And his ideas of mechanism don't hold water. But he said it all 15 years before Darwin, and he said it right.

We all know of many people who can't believe anything other than what their fellows believe, not even to save their own lives. But there are all the others, too, and reading the history of evolution makes me think about them. These are the people who knew that something was wrong with received ideas, but never got to voice their belief. Thousands of people in England and elsewhere must have had the thoughts that Chambers had. They did not even tell their husbands or wives, because they knew what would happen if they did.

Thus we have the general problem of acceptance of cryonics: in the current orientation toward death, our contrary ideas "convict" us out of our own mouths and close the minds of our listeners. It's very hard for anyone to come around to atheistical thoughts. From the beginning, their parents protected them from poisonous ideas. They have grown to trust many authorities, all of whom condemn the ideas. They won't know anybody else with them. They won't even know where to look for guidance. All their strivings will be individual ones. Hutton, Erasmus Darwin, and Chambers were not highly regarded. They are only remembered now because they were on the winning side. At the time they were discredited, crazy men. Their opponents, the creators and disseminators of opinion that only historians now remember, successfully blocked the idea of evolution for over half a century. It was a situation that was even worse than only being able to find out about an important scientific idea by reading about it in the National Enquirer.

RADICAL CRYONICS

by Mike Darwin

> "There is only one fundamental alternative in the universe: existence or nonexistence--and it pertains to a single class of entities: to living organisms. The existence of inanimate matter is unconditional, the existence of life is not: it depends upon a specific course of action. Matter is indestructible, it changes its forms, but it cannot cease to exist. It is only a living organism that faces a constant alternative: the issue of life or death. Life is a process of self-sustaining and self-generated action. If an organism fails in that action, it dies; its chemical elements remain, but its life goes out of existence. It is only the concept of "Life" that makes the concept of "Value" possible. It is only to a living entity that things can be good or evil."
>
> --Ayn Rand
> ATLAS SHRUGGED

Some months ago I was involved in a late night philosophical discussion with an acquaintance and the topic was the differences between our respective approaches to life. It was apparent that this man was very uncomfortable with

the topic and very reluctant to voice his feelings. Finally, the crucial question came up: I asked him, "Just what is it about my approach to life and to dealing with the world that you find so objectionable?"

Despite the fact that I had a pretty good idea of what the answer would be, I was still surprised by it, as he slowly, uncertainly articulated it. "I think you have a messiah complex," he said. "I think you think you are in touch with the absolutes of right and wrong."

A few weeks ago, I had a discussion under very different circumstances which ended up in basically the same way, but which was far more useful in exploring what I believe are the values and underlying feelings which prompted the comments paraphrased above. I was being interviewed by a reporter from the SAN JOSE MERCURY NEWS about cryonics and about why I was involved in it. Quite predictably, we ended up on the topic of values and on the area of human knowledge from which all values derive: philosophy. The reporter was trying to get me to accept her position that it could be morally right for her to choose to die and for me or someone else to go on living. I told her clearly and bluntly that the decision to die was wrong, and it was wrong in an absolute sense in any rational system of philosophy. I agreed with her that she had every right to make that decision and to carry it through, but I did not and would not agree with her that it was a morally correct decision.

Many of you may ask how I can take such a position, and you may think that the criticism leveled against me by my acquaintance in the first paragraph is correct. I hope you'll withhold judgment long enough to hear me out, because my response to that charge is an important one, and how you react to it, when you reach the end of this piece, may well determine how fast cryonics grows, how long you will live, and if you will be happy living.

My discussion with the reporter went like this:

> "Where do values come from?" I asked her.
>
> "Well, they just exist," she said. "You feel them and you know they're right."
>
> I replied, "But many people feel many different things. And the values of a Stalin or a Hitler are no doubt based on feelings every bit as intense as yours."
>
> This made her irritably defensive. "No, that isn't what I mean at all!" she exclaimed. But she didn't say what she did mean.
>
> "You see," I continued, "values don't just exist, and in particular they don't exist independent of people, independent of someone to hold them. A

value requires a comparison, an

evaluation of something as good or as bad in relation to something else.

"What," I asked her, "is your standard of value? If you are talking about a law, the question of the value of a law is whom does it benefit? If there were no people, then laws would have no value. The same thing is true for anything in this world; to hold something as having or lacking value requires judgement, requires the presence of a consciousness whether it be the value of a steak, an automobile or an idea. So," I then asked her, "what is your ultimate standard of value?"

It was a question she was unable to answer, at least unable to answer with anything but silent hostility.

I pressed my advantage and pointed out, "My own answer to that question is that my standard of value is life, starting first and foremost with my own life and going on to include the lives of others. Indeed, without such an 'a priori' standard it becomes very difficult to hold any other values at all."

This left her deeply disturbed and angry. "Who are you," she demanded, "to think that you are in touch with some kind of ultimate truth? Who do you think you are? Are you God or something? Don't you see that everything is relative and that what is good for you is not necessarily good for me in any absolute or ultimate sense of the word?"

I answered, "As a matter of fact, I do not see that, and I'm quite convinced that there is indeed an absolute standard of value and that I am indeed in touch with it: that a man's life is the ultimate standard of value against which all other things must be measured and from which all other values flow. And furthermore, if you don't know that, you are wrong, just plain wrong. Not only wrong in an abstract sense, but doomed to live a life of unhappiness and guilty uncertainty because somewhere, somehow, your life, your very self is not your ultimate standard of value."

To this she retorted, "You have no right to make judgments about my happiness! Besides, what do ultimate standards of value have to do with day-to-day happiness anyway?"

So I asked the woman once again, "Do you have any idea about what your ultimate standard of value might be?" She was still unable to answer that question. I went on, "Until you are able to answer that question and answer it as I have, you will have no yardstick, no tools with which to judge whether other things in the world around you are good for you or bad for you."

"But I have my feelings to guide

me," she returned, "and I feel that when it comes my time to die, I should die."

"But feelings -- emotions without reason or deliberate thought -- are an insufficient guide to live by," I said. "You can feel very strongly that you need a chocolate sundae, but if you are diabetic and 50 pounds overweight, your reason may tell you something quite different. Feelings are only worthwhile if they are based on reason, on a thoughtful examination of the alternatives which confront you in relation to your ultimate value -- which is, or at least which should be, 'Is this good for my survival, for my health and long term happiness?'"

"You're being dogmatic! You're unreasonable! I have a right to my feelings and I've learned to trust them," the reporter replied.

"Well, feelings which kill you ought to be examined very carefully," I pointed out with, I admit, a bit of smugness. "I'm glad that I don't have feelings like that very often and that when I do, I usually have the sense to think about them and figure out where they come from and possibly how to get rid of them." This essentially ended the discussion.

Both my acquaintance and the reporter shared one thing in common. Neither had any ultimate standard of value, neither had any belief in the possibility of ultimate truth, of an objective reality or of someone being able to take and hold such a position and defend it with confidence.

And, fellow cryonicists, therein lies the message of this piece. Almost since the beginning of cryonics our movement has been dominated by a kind of timid uncertainty that comes from being told, over and over again that everyone's point of view is valid. That what's good for A isn't necessarily good for B. Over and over we've had one message drummed into our heads more than any other: "Don't rock the boat, you don't have any way of knowing whether what you're doing is right or not, since you don't know if it will work."

Well, I for one am here to tell you that that statement is wrong. Not relatively wrong, not partially wrong, not possibly wrong, just plain WRONG! We have a standard of value and that standard is our lives and the lives of those we love and care about. It is the standard against which everything else is measured and we measure everything else against that standard by the application of reason. We are not animals, we were not born with any "instincts" to guide us in our efforts to survive. We do not have superb eyes, especially sharp teeth, tough shells, or chameleon skin. All we have to guide us is our faculty of reason.

When someone asks you to admit that there is something more important than cryonics, or to concede that "you can't know if it's right because you can't know if it will work" don't let them get away with it. Grab them by their premises and shake them till they walk away angry and dazed or -- converted.

It is true that we have no certainty about whether or not cryonics will

"work," in other words whether it will allow us to get to the future and go on living. At this point in time all that can be said is that the odds are unknown. But it is not true that we do not know whether cryonics is the right or morally correct thing to do. We do know the answer to that question and we should not hesitate to answer it. We know that cryonics is the right thing, the moral thing to do because we have an ultimate standard of value and the tool of rational thought to apply that standard of value with. Cryonics is, as far as we can rationally tell, the best available pathway to preventing the biological disintegration of our bodies and thus of our minds and personalities. It is the only technology which offers us the opportunity to stop the loss of structure and information which make us up and to, in effect, stop time for ourselves when we've all but run out of it. Based on existing scientific studies we can state with confidence that current freezing techniques, applied soon after so-called legal "death," are effective in preserving the vast majority of the molecular inventory of our bodies; the fine and gross structures which make us up.

We can state with confidence that cryonics is the only rational path open to us when faced with the prospect of death, and as any commonsense evaluation of our environment will confirm, we are, all of us, currently faced with the certain prospect of death. While we have no way of knowing with certainty that repair of people frozen with today's techniques will be possible, once again the application of reason to the problem suggests many pathways of possible repair and even reveals many detailed scenarios for repair and reconstruction of damaged living systems. After all, we have the whole natural world around as an example of the kinds of repair and fabrication technologies which are possible if we can control matter at the molecular level with a high degree of precision. That selfsame natural world is living proof that such control is possible. The task that confronts us is to learn the rules of that world and to bend them to our purpose -- which is what the whole history of civilization and of scientific and technical progress has been about.

That is why we are cryonicists and that is why we are right. It is also why it is long, long past due for us to stop letting people push us around and intimidate or ridicule us into silence. We have nothing to be ashamed of, nothing to be silent about. Wanting to live is not a crime, nor is wanting life for our loved ones. That is the highest standard of value and it is the standard of value upon which this civilization has been built and has prospered. It represents the best in us, and it is nothing to be ashamed of.

I no longer tolerate people telling me that they are morally right in laying down their life for their "species," for their "brother" or for their baseless, mindless and unreflected upon "feelings." They have the right to make such a decision, but they are not right in making it. I am proud of what I am doing and I am quite absolutely, positively certain that I am right in doing it. I will not compromise on that point, even if every other man, woman, and child on this earth believes me to be wrong. If that makes me -- and you -- a messiah in this world, then so be it -- for such a world is truly in need of saving.

The dominant emotions in the reporter and in my acquaintance were fear and uncertainty. That is not surprising. If you can't understand the notion of an ultimate value, then you can't really hold any values and you can't really make

any decisions about what is or isn't good for you. In such a situation all you are left with is fear, uncertainty, and doubt. That cannot lead to happiness or to long term survival.

Never forget that. Not for one minute, or one second. Never forget that despite all the uncertainties of cryonics you have one certainty that the smirking critics will never have: the certainty that what you are doing is the highest moral good and that it is in support of the highest and best values possible to man.

Holding these convictions will do much to improve the quality of your life. It may also do much to improve its length. Cryonicists should not feel timid about speaking out for their position. We have nothing to be sorry about or to apologize for. We are right and they are wrong. We have reason on our side, they have only blank, shapeless, indefensible feelings on theirs. We have as our ultimate standard of value life, they have as theirs only an empty void which is filled by a fear and a desire to escape an existence which has no values and offers only the nonexistence of death as its final reward.

We have a powerful and special thing on our side which we must never forget: we are right, they are wrong.

Learn not to be ashamed to say that, and to believe it. It's true.

THE BIRTH OF CRYONICS IN ENGLAND:

by Mike Darwin

"An optimist sees an opportunity in every calamity, a pessimist sees a calamity in every opportunity."

--Anonymous

"Your old men shall dream dreams; your young men shall see visions.

-- Joel: II, 28

In the May issue of CRYONICS, I authored a piece entitled "Probability Thinking" about the beginning stirrings of cryonics in another part of the world (England). At the time I wrote that piece, I had met none of the principals involved in the effort. Correspondence, a few brief phone calls and a lot of first-hand information from Britisher Luigi Warren were all that I had to form impressions from.

A lot has happened since I wrote that editorial in CRYONICS. In early August, Garret Smyth and Max O'Connor, two cryonicists from Britain, flew to Los Angeles to become acquainted with the cryonics environment in Southern California, establish a good personal and working rapport with the management of ALCOR, and get as much hands-on cryonics training as possible. I think it's fair to say that all those objectives were met.

Garret was able to spend a week in Southern California and, along with Max, attend one of our canine total body washouts. Max was here for six weeks of late night discussions, training sessions and a a visit to Lake Tahoe for the Life Extension Festival (he also got a day of R&R in Las Vegas).

Everyone who came in contact with Max and Garret was impressed. These guys are sharp, committed, and disciplined. Max is a philosophy student at Oxford who is about a year away from graduation. Garret is an estate agent. They have formed a British cryonics group, Mizar Limited, and I'll save the details of their efforts for Max to cover in his article elsewhere in this issue. Suffice it to say, Max and Garret are not alone; there are a number of other fine people such as Mike Price, John Styles, and John de Rivaz, who are already involved in organizing Mizar and providing financial support.

In contrast to virtually every other effort to establish cryonics "on the continent" I think this effort has a reasonably good chance at succeeding.

That statement stands alone: During his training here Max demonstrated more concentration of will and discipline than any other student I've had at any time. He started out by essentially memorizing the entire 145 page Transport Protocol manual -- procedures, pharmacology, dosages, glossary, and so on. He then showed a real willingness to learn and work, hammering away at skills oriented things like the use of the heart-lung resuscitator and insertion of IV

** PHOTO SPACE **
** CAPTION --

"Max O'Connor at ALCOR"

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cannula. Very impressive. In late September we shipped the UK group a complete ALCOR Coordinator's transport kit (HLR, drug box and other essential supplies). When the kit arrives and is nursed through customs there will, for the FIRST TIME IN HISTORY be a real capability to respond to a cryonics emergency in Europe!

Leaving the specifics of what is happening in Britain aside, there is another issue, at least as important, which bears discussing. Very often, when I talk to people, they tell me more or less the same story: they are trapped. They are born (an event which they have no control over), they go to school, they get a job, they get married, they get old, they die. In the average person's life there seems to be damned little opportunity to do anything other than what they're told or what's expected of them. In most people's eyes it's ludicrous to expect that they could do anything (except maybe have children -- and these days there seems to be a fair amount of cynicism about that event) which could really change their own lives for the better -- let alone change the world. They're trapped, and in a way they're already dead. They've handed off the responsibility of living to their offspring, the "powers that be" or some nebulous "next generation." They've decided to let a pinch hitter live their lives for them.

I think one of the reasons why many people hate cryonics so much is that it shouts two words at the top of its lungs louder than any others: personal responsibility. Let's face it, despite what we say about the relative low cost of cryonics it isn't an easy thing to get. Even if you live next door to a cryonics society, it doesn't take a fool to realize that the odds of getting a competent biostasis job right now aren't very good--our resources are small, it's a hostile world, and there are hundreds of technical and logistic hurdles which could cause serious problems. This situation is only magnified for people living in Delaware or Colorado, and it's brought into painfully sharp relief for people in England. So beyond the realization that if you make a about wrong decision about cryonics it could cost you and your loved ones your lives, even if you do decide it's workable, you've got a load of other hassles to contend with!

In short, cryonics demands of people that they make their own decisions -- Is it right or wrong?; Will it work?; Should I believe the experts? -- and then take action. In a world of "cattle" living in a Flatland of nonresponsibility those concepts can be frightening (or, more often, just plain incomprehensible). The British cryonicists are in the process of demonstrating that YOU CAN DO SOMETHING. Their particular effort may or may not succeed over the long haul. But whether it does or not, one thing is sure, they've already learned the

tremendous feeling of satisfaction and pleasure which comes when you decide to do something, to make a difference, to put yourself in control of your destiny -- and then have the courage and competence to do it.

Obviously, we can't all run out and start our own cryonics group. Personal aptitude, resources, and life situations will be powerful factors in determining what you can do. But rest assured, you can do something. If you live in Seattle or Tulsa, New York or Wyoming get signed up. If you're already signed up, make an effort to improve your chances if the

need for your suspension arises. There are many simple, inexpensive ways you can do this, and if you call us we'll be happy to give you advice and coaching.

One of our members recently provided a good example of how to take action to improve the "odds" by going to the local hospital in the small town where he lives, sitting down with his cardiologists and the hospital administrator and acquainting them with cryonics and what to expect. He also has made preneed "funeral" arrangements with a local mortuary to handle his air shipment to California. In both instances he took potentially hostile and suspicious people and won them over. We spoke with the mortician by phone, sent him literature and told him what to expect. When we started we were faced with a suspicious and cynical man. After we had spoken to him, referred him to several other morticians who we had dealt with us in the past, and provided him with a clear set of responsibilities and a clear picture of the compensation he would receive, we ended up with someone who was actually interested and a little bit excited about what we were doing and the prospect of being a part of it.

And that points up another nice thing we've discovered. When you do something and take responsibility, other people will be forced to react. Sometimes it will be to take responsibility themselves, other times it will be to denounce and argue. Either way, we promise you, your life will be more interesting.

We're not naive enough to believe that the above chain of events will always unfold (small towns, oddly enough help matters in such situations: people are used to treating each other like people instead of machines, and they rarely settle differences by litigation) and this case is provided by way of example more than anything else. But it does point up that there's plenty out there you can do, if you only decide you want to.

Our message here, so nicely underscored by recent events in England, is that you can make a difference. You can even change the world. It won't always be easy. In the short run it may even be unpleasant. But it can be done. And more often than not it will yield a lot of deep, lasting satisfaction. Sometimes it can even be a hell of a lot of fun.

Cryonics is a powerful idea. The notion that you don't give up on people just because you can't immediately solve their problems is so simple. But like taking the long-term view in any endeavor, it is a transforming idea. Cryonics will completely transform the world. Making the commitment to always, invariably, and relentlessly fight for life, to "leave no wounded behind" will be a development that will trivialize past "profundities" such as Islam, or Christianity. It is on a par with learning to speak, or learning to empathize with others.

The amazing thing is that average folks like you and me can really do

something significant to make it happen. Don't live your life being run down a cattle chute toward the inevitable. Take control.

Think about it.

CRYONICS IN BRITAIN

by Max O'Connor

For the last twenty years cryonics activities have largely been confined to the USA, with only Australia, and to a lesser extent France, showing any signs of life. Now a group is being formed in Britain for the first time. There have been one or two supposed organizations in the past with names like "the Cryonics Society of Great Britain" but they existed in no more than name and the pretense was not maintained past a few months. For years, there was only a single voice in the wilderness, that of John deRivaz, whose name may be familiar from the letters pages of this magazine. It was thanks to John's correspondence and publication of letters in a computer magazine that this group got started. It was as a result of his mediation that three others met to talk about matters like space industrialization, artificial intelligence, and life extension. These three - Luigi Warren (who moved to America in 1985), Mike Price, and Garret Smyth - soon drew me into their discussions which took place on Sunday mornings at Imperial College, London. At the time I appeared (1983), the focus of the discussions was switching increasingly to cryonics, an idea I immediately found attractive. The latest issue of CRYONICS would be produced and passed around to be eagerly read. Early on some of us, from the available information, realized that ALCOR was the best of the American organizations and it was the one to join if we were to join any of them. But cryonics remained just something - perhaps not "just" something - to talk about. "Cocktail cryonics" was in full swing.

In January, 1986 I sent a donation to the Silcool appeal which prompted a letter from Mike Darwin. He suggested that if I was sufficiently committed to an organization located nearly 6,000 miles away to give money, perhaps I should consider signing up as an ALCOR suspension member. The letter went on to suggest that there were enough of us to form a group and that such a group could be sent an HLR and ALCOR Coordinator's Rescue Kit. After some very careful thought on the matter and a rising feeling of excitement I responded in the affirmative. I didn't know that at the same time Garret Smyth had telephoned ALCOR because he was also interested in doing something rather than talking. The two of us got in touch and spent many hours a week on the telephone making arrangements.

The British Cryonics Society was formed on the 1st of May 1986, and its first meeting was held on the 18th. By the time of the second meeting in July the name of the organization had been changed to MIZAR (which is the companion star to ALCOR) and it had been incorporated as a limited company. The directors of MIZAR Limited are Garret Smyth (Secretary), Mike Price (Treasurer), John

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Styles (who became involved while still a fellow student at Oxford University), and myself as Chairman of the Board of Directors. Since then I have spent six weeks in California and have been trained in cardiopulmonary resuscitation, use of the heart-lung resuscitator, setting up an IV line, cannulation, and other procedures covered in the manual Transport Protocol for the Cryonic Suspension of Humans. I've also signed an agreement to become an ALCOR Coordinator with the result that, for the first time, British cryonicists will be able to

** PHOTO SPACE **
** CAPTION --

"MIZAR Chairman Max O'Connor"

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respond to an emergency by beginning cryonic suspension procedures (initial cooling and transport to America).

The relationship between ALCOR and MIZAR should be clarified here. The two organizations are entirely legally independent and, at present, there is no contractual link between them. Unofficially there is much cooperation and contacts between the two. Apart from the fact that I am both an ALCOR Coordinator and Chairman of MIZAR, all of our members must simultaneously become members of ALCOR. The reason for having a separate group here is to give us legal protection by incorporating, to allow us to buy equipment which won't be owned by any one of us, and because of our plans for the future. ALCOR owns most of the equipment that we will receive though MIZAR has already begun to buy some of the necessary items.

If, as we hope and expect, MIZAR grows and prospers, then we may become a functionally independent organization - though we would want to continue with any mutually beneficial cooperation - such as protecting each other's members when they are in the country of the other group. One good reason for acquiring a complete independent capability here is that there may be or there may arise insuperable difficulties in the transport of patients to the USA. In addition, this kind of transport adds greatly to the cost of a suspension. In 1987 we hope to buy a membrane oxygenator, arterial filter, perfusate ingredients, and any other items needed to be able to carry out a perfusion. In 1988 or before we intend to buy a small dewar capable of holding one neuropatient.

MIZAR will accept both neuro and whole-body members though we strongly favour and recommend the neuro option. The reason for this is that we believe it to be a biologically superior option, the suspended patient is easier to handle, and we can provide better protection and security for the patient. There is also the factor of cost (35,000 as against 125,000). We are considering offering a number of possible options at different costs: (1) Neuro suspension in Britain; (2) Neuro suspension in the USA; (3) Whole body suspension in Britain; (4) Whole body suspension in the USA. (Options (1) and (3) may may become available within 1-2 years). It is difficult to estimate costs at present but if we were able to store a whole body patient here in the near future we would require prepayment of a large sum in order to pay for a big enough dewar (it would have to be specially made). Alternately this prepayment could be waived if someone was willing to be stored on dry ice for the six months or so that it would take to have the special dewar made.

POLICY

The early days of cryonics in America - beginning soon after publication of Robert Ettinger's "The Prospect of Immortality" in 1964 - were characterized by mistakes, failures, and disasters, as well as successes and a considerable amount of media exposure. We are very concerned to ensure that the same things do not ever happen here. That is one of the reasons that we are connected with ALCOR which we consider to be a superbly well run organization, headed by men and women of intelligence, ability, and integrity. We hope to learn from their store of experience and knowledge in the field. We will take ALCOR as a model in the way in which we run MIZAR and will be open to suggestions and constructive

criticism of our policies. One central policy, following ALCOR, is that we will require that any director of MIZAR must also be fully signed up for suspension, thereby ensuring that there is a clear and direct link between the welfare of MIZAR and the goals of its directors. A deadline of 1st November has been set up for the fulfillment of this condition. Any director not fully signed up at that point will lose his directorship, and no new directors will be allowed without meeting that condition.

At the 14th September meeting we adopted a policy of placing 10% of all incoming funds (except that portion to be transferred to ALCOR) into the Patient Care Fund. We feel that this is important since suspension and storage is the central function of the organization and it is essential that there always be money available for this purpose. We also formed an initial policy on last-minute suspension cases. Once we begin to pursue media attention we will expect to receive calls from people trying to arrange suspension for their dying relatives (in fact this has already happened to us once). Such cases present difficulties because we are left with very little time (or no time if death has occurred) to get the necessary legal paperwork and financial arrangements in place. Our policy as it stands at present is as follows: We will not even consider cases where death has already occurred, partially because immediate action would involve us in costly procedures and we would have no guarantee whatsoever that we would receive money for this or for long term storage. We believe a conservative policy is in order here since we are in a very vulnerable position in the early days. Removal from storage due to non-provision of long-term funding would attract very bad publicity. Any case in which death had not yet occurred we would consider on its merits, and only on consultation with ALCOR. We would require at least 5,000 before doing anything, to cover initial expenses, and would have to be satisfied that enough money was available for the balance.

Editors permitting, I intend to keep CRYONICS readers up to date with our progress or lack of it. We would be pleased to hear from anyone with information, advice, or suggestions we could use. These may be private or may be submissions to our newsletter - BIOSTASIS. Our address is: 54 Union Road, Northolt, Middlesex, UB5 6UE, England.

REVIEW OF THE 1986 LAKE TAHOE LIFE EXTENSION FESTIVAL

Once again Fred and Linda Chamberlain did a magnificent job of hosting the cryonics get-together of the year: the Lake Tahoe Life Extension Festival. It is impossible to even begin to summarize the events that took place at this year's Festival, but we'll try to cover the high points. A word of warning at the start: there won't be any exhaustive review of the technical or other papers presented. Some of them will be reprinted in CRYONICS later, and for those of you who really want to know what went on we we have some good news for you: videotapes of the presentations will be available from the Lake Tahoe Festival, Inc. For information on how to get tapes, write:

Fred & Linda Chamberlain
P.O. Box 16220
South Lake Tahoe, CA 95706

The Festival opened, as usual, with a well attended reception at the Timbercove. There were approximately 45 attendees this year, fewer than

last year's bumper crop of over 60, but still a respectable crowd.

(One of the mysteries to us is WHY the Festival isn't better attended. Perhaps we need more advance notice, perhaps a more accessible place, maybe a more prestigious title for the event or a higher registration price tag. As it stands, the Lake Tahoe Festival is a wonderful bargain and an incredible opportunity to find out the real ins and outs of cryonics. It's a shame more of our subscribers and members don't take advantage of it.)

There were the usual last minute changes and cancellations which any conference experiences. In this case Ward Dean was unable to attend and deliver his presentation on biological aging measurement. Fortunately, a fair number of the attendees were able to see Ward's presentation at the Life Extension Breakthrough Conference in May -- and a very interesting presentation it was.

We made a special effort this year to talk with a cross section of attendees and poll them on the various presentations; what they thought of the quality, organization, and content of the talks. We have woven these comments into our review.

Dave Pizer and Mike Perry opened the morning with Venturism: The First Life Extension Cryonics Religion. The audience seemed a little nervous as Dave and Mike began their appeal for members of Venturism, a religious movement they have founded. The area is obviously a very controversial one even in a group as diverse as cryonicists. Most of the Festival attendees are atheists and agnostics, and while Dave and Mike were politely listened to, there seemed to be no eager converts.

However, Dave and Mike did give a thoughtful presentation which demonstrated that they had given a lot of thought to their undertaking. Dave, in particular, was very articulate and emotional in his appeal, arguing that Venturism could provide a philosophical framework of use to cryonicists and might help to defeat or sidestep restrictive legislation aimed at damaging cryonics.

Most folks we talked with felt that the high point of the morning was Dick Marsh's presentation, The Killer Word. Dick is Emeritus Professor of Communications at the University of San Francisco and a Director of the American Cryonics Society. Dick gave a lively account of the impact of words in shaping our thoughts and expectations. It's really impossible to do justice to Dick's talk in the few lines available here. However, we plan to reprint an article which covers most of it in CRYONICS in the near future. Dick's presentation was especially remarkable since he was suffering from phlebitis in both legs and appeared to be in stoic agony until he took the podium -- at which point he was 100% the enthusiastic professional.

Thomas Donaldson followed Dick with a presentation entitled, Does the Soul Survive After Death. Despite the provocative title it was not a continuation of the religious presentation which preceded it. Thomas defined the "soul" as identity and tried to give an overview of what we know about memory and personality and their durability. While Thomas was quick to point out that we don't really know how memory is stored, we do have a number clues and indirect hints.

Much of Thomas' presentation was focused on how we treat people who are

damaged today in ways that destroy memory, or access to it, as well as other structures upon which personality depends. Thomas put forth many fascinating ideas and his presentation was of considerable interest, but it was rather disorganized and failed to develop and unite the points. We overheard a number of people complaining that they couldn't understand what the point was he was trying to make, and we think this was probably due to the range of material he covered and the lack of a firm organizational framework to tie it altogether.

The afternoon session began with a talk by Dr. Gregory Fahy of the Red Cross Blood Research Lab in Bethesda, Maryland. Dr. Fahy is an internationally known cryobiologist who is the developer of the vitrification tissue preservation technique.

Dr. Fahy presented a basic primer on cryoinjury -- how and why does freezing occur, and how and why cryoprotective agents block this injury. Fahy's presentation was lucid, but was also too

massive and complex for most of the audience to digest. Many of the attendees complained that there was simply too much information for them to handle. In fairness to Dr. Fahy, we sympathize with the nearly impossible task of trying to simplify a complex discipline for a very inhomogeneous group of people. For those with some basic understanding of biology, Fahy's talk was no doubt very useful, and in part, the purpose of the lecture was to provide some education for those of us "back woods" cryobiologists who are out there freezing people.

Jerry Leaf of Cryovita Laboratories and the ALCOR Life Extension Foundation followed. Jerry's presentation was concise, well organized and impressive in the opinion of virtually everyone we talked to. It was especially impressive because of the "prop" he had brought with him: a completed, working Mobile Advanced Life Support System (MALSS, pronounced Malice as in malice against death). The MALSS is a heart-lung machine/operating room/hypothermia unit on a cart. The unit has a built in heart-lung resuscitator with oxygen supply, a battery-powered blood pump with membrane oxygenator, heat exchanger, and circulating pump, suction, air compressor, surgical tray, and equipment for monitoring blood gases, pH and temperature! The unit weights 280 pounds and is completely self-

contained, including batteries for all its power requirements. It is capable of cooling a 175 pound man to 10`C in about 15 minutes -- and providing him with all of his metabolic requirements on the ride down!

Jerry described the cart and explained its advantages over the currently deployed heart-lung resuscitators which take nearly 10 hours to cool a patient to 10øC and deliver at best only 1/3 to 1/4 of the normal cardiac output. The MALSS is available to ALCOR Biostasis Members.

Dr. Hal Sternberg, a biochemist at the University of California at Berkeley, talked about his biochemical investigations of degeneration of the thymus gland, which appears to be directly related to decline in immune function. A major portion of the talk, and the vigorous discussion that followed, was taken up with the report that a Polish researcher has reported doubling of lifespan in his experimental animals. This occurred as a side effect of work on skin allografts where the animals were given thymic extract from early fetal (approx, 1st trimester) calves. Comments from both Dr. Sternberg and the audience produced a large number of presently unanswerable questions: number of animals observed, bioassay problems, stability of the agent, etc. The general concensus was that, however incomplete the data appeared to be, the idea was plausible and the reported results sufficiently dramatic to deserve a serious attempt to duplicate them. Given that the effects are real, identification of the active compound(s) would seem to be a matter of biochemical routine. Funding to pursue this work has been granted by the Life Extension Foundation to Drs. Roy Walford and Richard Wiendruch at UCLA.

On Saturday night, a banquet was held. Choice: beef, chicken, or vegetarian. After the Banquet a vigorous panel discussion ensued on The Pros and Cons of Two Modes of Cryonic Preservation: Neuropreservation and Whole Body. Thomas Donaldson did an excellent job of chairing the panel and panelists Mike Darwin, Jerry Leaf, and John Day went at each other in a good natured way, and the discussion was enhanced by a lot of thoughtful comments from the audience. This discussion got high marks from the attendees we talked with, and it probably wouldn't be a bad introduction to the issues for people who are as yet undecided on which way to go.

Sunday morning opened with a presentation by Paul Segall of the University

of California at Berkeley and Director of Biological Research for Trans Time, on New Directions in the Life Extension Sciences. This was a recap of how Dr. Segall got involved in aging research and cryonics, followed by an interesting summary of his work on the effects of tryptophan-deficient diets on rats: using females of a polygenic strain of rats, optimally tryptophan-deficient diets can sometimes result in rats that live as much as 25% longer than the controls, and can (when removed from the diet) bear live pups at nearly twice the age that the control animals did. As the slides that accompanied the talk conclusively demonstrated, these results in no way endorse this approach in humans. The animals were placed on the diet at weaning, often died quite early, and the appearance of the survivors gives new meaning to the term "miserable rat." The short list of induced pathologies includes very restricted growth, hairlessness, and cataracts. Interestingly, a very few rats did relatively well on the diet -- and died at about the control lifespan. Work by some

of Dr. Segall's coworkers indicates that the mechanism is the restriction in synthesis of brain proteins critical to the maturation sequence. As maturation proceeds, different brain cell subpopulations mature and die. This sequencing is crudely blocked by the inhibition of protein synthesis by tryptophan deficiency. This leads to the speculation that transplants of fetal brain cells might arrest or reverse aging by replacing lost subpopulations of brain cells.

Paul's presentation was followed by a well organized presentation from his associate Harold Waitz. Dr. Waitz is Director of Research for Biophysical Research and Development of Berkeley, California. Dr. Waitz presented information on BPRD's hamster and canine total body washout work. BPRD is pursuing a washout model using both rodents and dogs employing a buffered Ringer's based solution. The work presented at the meeting documented recovery of a dog from 1-hour of asanguineous circulatory arrest. Dr. Waitz also discussed the prospects of applying this model to primates which BPRD has available to it.

Mike Perry was up again next with a discussion of his research project on the "predisposing factors" which make for an immortalist. Mike had no hard conclusions to offer, but his paper raised a number of important points and a decision was made to pursue the issue by designing a more comprehensive questionnaire and gather more data.

The afternoon session consisted of three papers by Mike Darwin, President of the ALCOR Life Extension Foundation. The first was an introduction to ALCOR, the second a histological evaluation of the rate and degree of postmortem tissue structure lost over time, and the third a progress report on the ALCOR Canine Total Body Washout (TBW) project. Unfortunately, these papers were not well organized and were unrealistically budgeted for time. The majority of people we spoke with rated theses presentations poorly on the basis of organization and comprehensibility.

Part of the problem was no doubt the sheer volume of material that was to be presented, and the complexity of the caveats and explanations which accompanied it. The histological study is part of a systematic survey ALCOR is conducting to determine the rate and nature of postmortem structural change in the brain. Darwin, in cooperation with Dr. Fahy, presented a vast collection of light and electron micrographs documenting alteration and loss of cell structure

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in dogs that were exposed to 2, 12, and 24 hours of warm ischemia ("death"). What they found was that deterioration is quite marked at 12 hours and much worse at 24 hours. (No surprises there! But what was surprising was the degree of intact (or at least recognizable) structure left at the light microscopy level even after 24 hours. Much other valuable information about the nature of the breakdown in cell structure was also presented, but a detailed exposition of these findings will have to await publication.

The Canine TBW paper dealt with ALCOR's research efforts to develop a noninjurious storage solution for the brain -- and the whole organism. Previous successes with 4 hours of blood perfusion at 4øC were reviewed, and long term follow-up on two animals was presented indicating that the TBW procedure had no long-term ill effects on health or well being.

The most important research finding was, however, somewhat obscured by the pace of the presentation and its lack of tight organization. That advance was the development of an "ametabolic" approach to cold, bloodless perfusion. In order to control pH and eliminate the dangers of reperfusion injury in human biostasis patients who've been exposed to ischemic episodes ALCOR has been experimenting with using an oxygen- and substrate- (glucose) free perfusate, in effect shutting down residual metabolism at low temperatures by depriving the tissues of nutrients and oxygen. Darwin reported on success with this approach: 2 hours and 16 minutes of ametabolic perfusion at 5`C with no neurological deficits. pH was also more easily controlled and the animal appeared to recover more quickly. The key to success was the design of a perfusate which provides support to the cells in the absence of normal metabolism and prevents them from swelling or losing or gaining important salts.

The late afternoon was opened with a fascinating and thorough exposition of Recent Work On Vitrification, again by Dr. Fahy. Dr. Fahy described the basic principles of vitrification, explaining that it is a technique which allows tissues (and hopefully organs) to be infiltrated with a mixture of cryoprotective agents in a way which completely prevents the organs from freezing upon cooling. This technique essentially eliminates problems associated with freezing injury, but creates a few problems of its own. The most significant of the problems associated with vitrification is the problem of the toxicity of the cryoprotective agents used to prevent freezing. Dr. Fahy discussed a number of techniques he has developed to minimize if not altogether eliminate toxicity, and explained his new computer-controlled system for completely automated perfusion of organs. This system can load and unload organs with the high concentrations of agent needed, and it can do it in a highly controlled way which minimizes the organ's exposure to the potentially damaging agent. Fahy's paper was very impressive, and represents a tour de force of careful groundlaying for what promises to be a series of landmark experiments.

Saul Kent closed the conference with an upbeat and optimistic (as usual) discussion of the Life Extension Foundation's activities and efforts. Saul pointed out some of the pitfalls associated with giving out money (investigator's leaving the institution you gave the money to, technical problems with materials...) but, far more importantly, discussed the kind of projects which are underway and the preliminary results. Most impressive was the total of grants the Life Extension Foundation has given: $300,000! Very impressive for a private foundation funding immortality-related research.

SCIENCE UPDATES

by Thomas Donaldson

OBESITY

Obesity is presently a serious health problem. Obese people have much higher rates of heart and vascular disease and even cancer. Thus, we need much better ways of dealing with obesity.

In one sense obesity depends on a behavior trait. That is, people become obese because they eat more food than they can use in daily activities. Their bodies store this food as fat. But as with all other

behavior traits our actions result from drives. Obese people report, in fact, that when they try to eat amounts of food which "objectively" supply them with enough calories for daily life, they will feel constantly hungry. We cannot turn our drives on and off like a radio. Our drives are not subject to will. They are our will.

Hence, what may seem a simple matter of "behavior" becomes a difficult medical problem.

Recently in the NEW ENGLAND JOUR OF MEDICINE (314, 193-8 (1986)) a group of Danish physicians published an important paper on the heritability of obesity. The Danish government maintains extensive records on the genetic parents and background of adoptive children. These doctors could therefore answer the question of whether or not obesity depended on the genetics of the parents or the environment in which adoptees grew up.

They discovered something which many people have suspected for a long time. It turns out that in this sample obesity depended very little if at all on whether or not adoptive parents were overweight. Genetic children of obese parents strongly tended to be obese themselves, even if they grew up with beanpole parents.

The group of Danish doctors studied a total of 3580 adoptees. They assessed obesity by the body-mass index (weight in kilos divided by the square of the height in meters). They found that body-mass index of children correlated strongly with that of parents across the entire range from very thin to very fat.

Obesity results from a difference in behavior. Interestingly enough, the authors cite a 1981 study suggesting that personality traits in general depend very strongly on the genes of the parents. This would conflict with many views about the role of environment.

This study is very significant. It may bring some clarity to cryonicists who suffer from this problem, even if it brings no help.

However, it's also not the whole story. Any study comparing genetics with environment will show a high degree of heritability of traits for which the environment is highly uniform. Why? Just imagine a group of people all reared in identical environments. Their differences must therefore depend solely on their genes. A study of this kind doesn't really answer the question of whether some environmental change might cause a difference in degree of obesity. For instance, comparisons of Americans and Danes may show that Americans tend more to be fat. This would come from uniform differences in the environment between the two nations. One fact I notice strongly, myself, on coming from Australia to the U.S., is that Americans seem much more concerned by food and digestion than Australians. They also tend more to be overweight.

To someone who is obese, of course, the suggestion that they should better choose the circumstances in which they grew up is no more helpful than the suggestion that they should have made a better choice of parents.

Obesity is also interesting from a completely different viewpoint. Only a few hundred years ago, obesity was admired as a form of beauty (consider Rubens,

for instance). Now it is seen as a problem. The reason for this is that we no longer suffer from scarcity of food. The health risks of obesity no longer balance the risk of starvation faced by thin people. Every single attempt to "assist" obese people constitutes an attempt to artificially redesign ourselves. It's true that in the future we'll have much better ways to redesign ourselves. The point is that attempts at such control are not at all new. They go back for as long as human beings have existed.

DEVELOPMENT AND THE HOMEO BOX

Two years ago, in 1984, McGinnis, Scott, and Weiner (PROC NAT ACAD SCI, 81, 4115 (1984)) discovered that several sequences of genes controlling development in fruit flies contained a common special sub-sequence which they christened the homeo box. We now know several gene sequences each containing a homeo box. Mutations of these genes often cause the flies to grow one body part where instead they should grow another. For instance, a gene sequence might cause an antenna to grow instead of a leg. But not all development genes associated with homeo boxes do this. Mutation in one sequence of developmental genes (the mutation has been christened fushi tarazu) causes deletion of equivalent regions in every other segment of the fly.

Since these scientists discovered the homeo box in fruit flies, others have gone on to show that very similar sequences of genes occur in mammals. Discoveries about development genes in fruit flies therefore tell us about how our own development is guided. As time passes, we find more and more species using homeo boxes to control their development.

Genes must somehow control development by coding for chemicals of some kind. One reasonable theory of how such genes would work is that these chemicals attach to other regions of DNA. Once attached, they turn these regions on or off. If turned off, of course, these regions don't produce their protein products. Similarly, if turned on, they will. This difference in production of proteins by different cells is what controls growth into different organs and tissues in the animal.

Unfortunately up to now no one has really had good controls on what these chemical products are and how they act. Even before we could work out gene sequences, scientists worked out by experiment that development depended on diffusion of unknown chemicals from one part of an organ to another. They did this by systematically transplanting parts within embryos in chickens. Direct control over development was out of the question.

Proteins coded for by all the gene sequences containing a homeo box will all contain a special sequence of about 60 amino acids. This sequence is now called the homeo domain. Recently another advance has taken place. The protein product of one of these gene sequences (called engrailed) turns out to bind to specific sequences of DNA in the fruit fly cells. This is strong evidence that the basic theory of development outlined above really is the true one. It's also strong evidence that the homeo box really is involved in development.

In NATURE (318, 630-635 (1985)) C. Desplan, J. Theis, and P.H. O'Farrell describe how they show that the homeo domains from the engrailed sequence in fruit flies will attach to special sequences of DNA in fruit fly cells. They used cloning techniques to produce proteins just like those made by the engrailed gene. They also made others which contained the homeo domain alone. Binding seems very specific. This fact supports

the idea that it is a special function of the homeo domain protein.

Furthermore, we would expect all the development genes to control one another. Their interrelations will become quite complex. This means that proteins from one sequence of development genes may bind to parts of another. Desplan et al verified that this happened. The homeo domain of fushi tarazu would bind to parts of the engrailed sequence.

These discoveries have no obvious clinical significance. They are important because the chemical control of development has proven very hard to characterize. Very minute amounts of development chemical cause great differences in growth, turning a wing into a leg, for instance. Without means of synthesizing these chemicals we have few means of studying their regulation. Most work on development so far, in fact, has depended on deduction from the effects of these chemicals that they must exist. Even more, we have no means of controlling development itself. All these problems are about to change. We can make large amounts of development proteins with recombinant DNA. This brings much closer the time in which we will directly control development. Control over development certainly will have clinical applications.

NERVE REGENERATION AND SILICONE TUBES

As scientists work more and more on the formerly hopeless problem of nerve system regeneration, they get closer to real clinical applications, even if these applications are small compared to what we will someday accomplish. An example of this is the increasing number of studies of peripheral nerve regeneration using silicone tubes.

Peripheral nerves are nerves outside the spinal cord and the brain. Unlike the latter, peripheral nerves do have some small ability to regenerate. If severed, and if conditions are very good, it's possible for them to heal together again. But it's not easy. Someone may accidentally sever their sciatic nerve (which connects to the lower leg). This will paralyze their lower leg. Means to help recovery from such an injury become important.

Over the last few years neurologists have discovered a simple way to help such repair. Ordinarily if the severed nerve stumps are too far away from one another the nerve cannot grow together again. But if the stumps are put inside a silicone plastic tube, isolating them from the rest of the body, this will actually help guide one another together again. The technique is not only clinically useful, but even helps experiments on nerve repair in general.

The main point of silicone tubes here is that they concentrate any chemical influences produced by nerve stumps. Recently two papers have produced still more evidence of the usefulness of this technique, even for study of the central nervous system.

C.B. Jeng and R.E. Coggeshall publish in EXPERIMENTAL NEUROLOGY (91 154-162 (1986)) their results on fragments of peripheral nerves as "boosters" of regeneration. They studied severed rat sciatic nerves. Their aim was experimental rather than clinical. Could a fragment of nerve promote regeneration through the tube in the same way as the opposite stump of a severed nerve? Earlier papers had established that the tubes did indeed

promote healing. The cut ends would grow together again (G. Lundborg et al, BRAIN RES, 293, 201-211 (1984)). This study was an attempt to work out why.

The authors severed rat sciatic nerves and then tied off the opposite far end to increase its distance from the stump. This would mean that this far end could not produce any chemicals to successfully guide a stump to join up with it. They then set up a silicone tube arrangement with a fragment of sciatic nerve at the other end. This setup turned out quite successful at promoting growth in the near end stump of the nerve. It was not quite so successful as the real opposite stump would have been. Quantitatively, regeneration was about half that obtained if the opposite stump was used. Both blood vessels and axons grew into the tube.

As yet, of course, we've no idea of the chemical which is made by a fragment of nerve which promotes growth in this way. A second paper, again using the silicone tube technique, shows that this same chemical will help regeneration of central nerve tissue. This could obviously be very important. M.J. Politis and P.S. Spencer (EXPERIMENTAL NEUROLOGY, 91, 52-59 (1986)) report some success with using fragments of peripheral nerve (again within silicone

tubes) to aid regeneration of severed optic nerve. This is very interesting because the optic nerve is part of the central nervous system, not the peripheral nervous system. The usefulness of optic nerves experimentally, of course, is that they are easier to isolate than other parts of the central nervous system.

These authors crushed the optic nerves of rats. Simultaneously they inserted a fragment of peripheral nerve (within a silicone tube to isolate and direct its chemical influences) so that it could (hopefully) aid regeneration of the optic nerve. This did happen. Axons from the retina of the rats' eyes grew into the tube toward the peripheral nerve fragment. These authors used several techniques to show that nerve cells from the retina had indeed grown toward the peripheral nerve graft. Growth was far less in control rats whose retina had been removed. Furthermore, it's possible to trace out nerve connections with chemical techniques. These showed that the nerve fibers growing into the graft came from retinal cells.

I believe that this work is most significant for showing that some unknown chemical or chemicals made by peripheral nerves will help regrowth of nerve tissue, even from the central nervous system. Once we isolate this chemical we'll have a very useful means of guiding regeneration even in brains. Much closer, of course, is likely clinical application to regeneration of peripheral nerve tissue. It's not repair of damaged brains, but ways to repair people paralyzed by injuries which sever nerves in their body would certainly improve our lives.

TURKEY ROAST

WHAT!!! Turkey Time again!

Somewhere out there, there is a turkey. He doesn't know it yet, but on Sunday, December 7th, he's going to be the guest of honor at a serious

ALCOR event. The ALCOR Annual Turkey Roast and get-together will be held at Saul Kent's new home in Riverside, CA. Forget business and come for some serious

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socializing. Topics to be discussed will be anything you can get through the door. See old faces! See new faces! Meet real people who are seriously planning to live forever! Mark the day (or the weekend, if you're that far away) on your calendar with indelible ink and swear on your ALCOR ID tag to come. No tag? Come anyway. You may come away convinced you can't do without one. Remember, ALCOR is its members. If you think this is going to be a memorable Turkey Roast, you're going to have to come and see for yourself!

The format will be, as usual, pot-luck. Contact Mike or Hugh at ALCOR for coordination. Instructions to get to Saul's place are on the next page, in the meeting schedule. You will be coming right past the new facility, and it is close enough that we will be conducting excursions.

NOVEMBER-DECEMBER 1986 MEETING CALENDAR

ALCOR meetings are usually held on the first Sunday of the month. Guests are welcome. Unless otherwise noted, meetings start at 1:00 PM For meeting directions, or if you get lost, call ALCOR at (714) 738-5569 and page the technician on call.

The NOVEMBER meeting will be at the home of:

(SUN, 2 NOV 1986) Paul Genteman
535 S. Alexandria, #325
Los Angeles, CA

DIRECTIONS: From the Santa Monica Freeway (Interstate 10), exit at Vermont Avenue, and go north to 6th St.
From the Hollywood Freeway (US 101), exit at Vermont Avenue, and go south to 6th St.
Go west on 6th 4 blocks to Alexandria, and turn right. 535 is the first apartment building on the west side of the street. Ring #325 (Note: See the building directory for the correct phone number to punch) and someone will come down to let you in.

The DECEMBER meeting (ANNUAL TURKEY ROAST) will be at the home of:

(SUN, 7 DEC 1986) Saul Kent
16280 Whispering Spur

Riverside, CA

DIRECTIONS: Take the Riverside Freeway (Hwy 91) east to Riverside and get off going south (right) on Van Buren Blvd. Whispering Spur is south of the freeway four miles, and 1.0 miles beyond Mockingbird Canyon Rd., on the left. 16280 is the second house on the right, at the end of the white fence.