



SANDW ORM
&
ZYMURGY

This is Zymur-Worm #20g, Oct. 1974. It comes to you thru the combined idiocy of Dick Patten (2908 El Corto SW, Albuquerque, NM 87105) and Bob Vardeman (Box 11352, Albuquerque, NM 87112). It can be had for locs, contribs, trades, or as a last resort 50¢.

This is the first ish that Bob and I are putting out so everything is a little fouled up, confused, and generally in a mess. (In other words perfectly normal.) I do have a few things I am supposed to tell you. I am not sure why Bob leaves it to me since I have the natural ability to forget at least one thing I am supposed to say. In case you haven't already figured it out, the I reffered to on this page is Dick. Just about anything you see typed in this type style will be me.

Right now Bob and Mike kring are in the other room putting together a long article by Al Jackson. I ran it off for Bob two years ago on a coppier. I don't want to say it took a long time to get sent out but it will be included in this issue of ZWorm. Some of the other things this time are not the newest either but it is still pretty good.

We are going to try and run this 6 times a year. I don't know how well we will stick to that but it sounds good. We plan to keep each ish to under two oz. so we can afford to mail them. Any trades or such should be sent to me, I'm the book keeper, and I will make sure Bob sees them. As Bob says we don't need two issues of any trades one will do fine. Of course that doesn't mean that Bob should never get anything sent to him. Any ticking packages or threats or things like that can go directly to him. I wouldn't want anything that important to get there late would I?

I was up till 4 this morning, drinking and arguing with a crazy bunch of people. The club had a party here last night, in case you were wondering who the crazy people were. I the event you are wondering why I thru that in I will tell you. I still have 30 lines to fill on this page and I am not really in the shape to do it. Especially since I have to run it off today and then check out the mailing list and put the issue tigether (I don't know how to spell coilate and I can't find my dictionary) and address it. I am in such a hurry because I am going out of town next week.

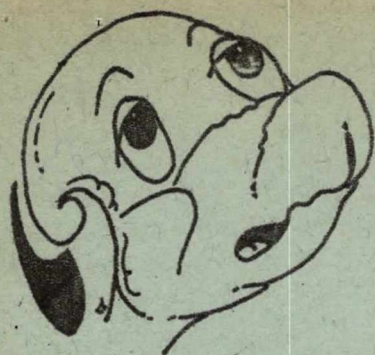
For the second time this year I retired. Also for the second time this year I had to find a way out of retirement. I went to work for this company and they decided I would have to go to school to learn how to fix typewriters. I find that interesting since the reason they hired me was that they had a bunch of machines needing to be fixed and had noone able to fix them. So for the past couple of weeks(while I was waiting for a class to start) I have been fixing these machines. But I have to quit fixing the machines so I can go to school so I can learn how to fix the machines. If you think it sounds confusing to you, you should have seen me trying to explain it to my kids.

Anyway, next week I have to go to New York for a month to learn (oh, forget it). Not that I really mind going to New York, after all I was born there, and lived there for better than twenty years, and olny left the first chance I got. Come to think of it, I guess I do mind being sent back. What the hell I can always go down to beeline and find out why they haven't sent any copies of Pleasure Planet to Albuquerque. Or I could go to the Conde Nast building and worship infront of Ben Bova's office. Or if none of that moves me I guess I could stop by Central Park and get mugged. Come to think of it there are all sorts of things I can do in Fun City.

Well I guess I am fairly close to the end of the page I should go into the other room and ask Bob what I forgot while I still have some room to add it.

Now I know why Bob left it to me, his memory is as bad as mine. Please respond to this issue. Many are being sent to people on Bob's list and his list hasn't been used in two years. We have no idea how many of you have moved. Any issue s of either Z or SWorm you have comming will be converted one for one.

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sigh... let's try it
one more time.
Zyma what??

Gee, he said, this seems odd, Naturally, I'm referring to this, another Sandworm editorial. What's really weird is that it's not exactly a SWormish editorial altho I, Bob Vardeman, sandmaster, am typing it. It is no longer SWorm as the illo by Sheryl Birkhead, next door, indicates. It seems I enjoy doing this part of a zine; I like typoing things, cutting the stencils and doing my mis-layout, mimeoing. I detest collating as only a cobra can hate a mongoose. Addressing and mailing the rotten thing beggars words I hate it so.

However, there is an answer to this dilemma. Dick Patten, of Zymurgy, suggested a fusion of our efforts. Since SWorm hadn't wiggled in so long and Dick likes doing the very things I don't, I figured I'd give it a try.

This is either a Fermented Sandworm (Gusano de Maguey en Mescal?) but then it always has been to some degree. Dick likes the title Zymur-Worm. ZWorm seems to have the edge. A quick breakdown of the duties. Send all letters of comment and gripes about mailing, etc to Dick. Either of us can get articles or artwork. Send letters of comment to Dick. He can get first glance at them, give me his comments, then I can decide what to do with the letters. Frankly, since we are adopting a smaller format than I've used in the past, the physical number of letters will have to be curtailed. But that doesn't mean we won't enjoy getting 300 pg letters. It just means you might only get 299 printed.

I'm not sure what number-letter this is. You can figure it out. It's my 7th annish and Dick's annish. That I've only reached #20 on a qtrly schedule shows my need for a co-editor.

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Lots of you will get this that don't deserve it. Lots of you whoshould be getting it won't. Let us know either way.

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I drank the corflu so no whise crecks, eh?

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Dick perfers (so you be our poorfreader) quotes, I like snappy interlinos. In deference to Dick, I humbly submit this quote: I had rather have a fool make me merry, than experience to make me sad. Hopefully, we two fools can make you merry (I leave the marry part to Roy Tackett who recently performed his first marriage service. Rumor that he is opening a pet cemetery as well are totally unfounded, altho HORT will do such services on request.)

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I suspect thish will have few letters, lost locs, new locs, a Bubonicon report, no book reviews, no reviews of anything to speak of and a lot of the "first issue" syndrome. Even tho I have turned out about 4 pgs a month for the last 2 yrs for SLANapa and about 10 pgs for FAPA, doing something like ZWorm feels different.

I feel obligated for various reasons on the book reviews, some of which will appear in later issues. The bozo publishers have kept me on their mlg lists all this time so I should tell them how bad the field is getting, or rather, what trash they are printing.

F'rinstance, brace yourselves for heresy, I find Barry Malzberg to be the single worst writer to have come along since Col. SP Meek or Robt. Moore Williams. Malzberg is either ignorant or stupid when it comes to science (I got to pg 2 of Phase IV before I shucked the book down and snickered at his stupidity) and inept when it comes to being able to write. Herovit's World is an outstanding example of his lack of literacy. (Unless Bill Bliss has invented a ratcheted pingpong ball---Hi, Bill!) Malzberg needs a dictionary worse than any other writer I've ever seen. The blurb says he's sold 5 million books. My mind boggles at where hismother could store that many copies of his books.

But I don't want to get into reviews of books, altho I recommend the "Kenneth Robinson" books now that Goulart has taken over the writing. Very funny and Goulart is a writer who always manages to please me. Face it, he can string those words together in ways Malzberg would find perplexing. After all, Goulart can communicate. Malzberg can obfuscate.

As the sage once upon a thyme remarked, eschew obfuscation!

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Movies I've barfed at: The Thing With Two Heads. Am Unintentional TV fare, true, but bigoted, racist and downright dumb. Warhol's 3D Frankenstein, now, that one had it's moments. The necrophilia scene, the gall bladder fetish scene, the armpit fetish scene and the sadistic assistant with the snake-like tongue and bugeyes were funny. Intentionally so, I can't say. But funny. I also got crossed eyes because the 3D didn't work very well. Return of the Dragon with Bruce Lee was an odd film combining comic elements with plain ole fashioned maiming and killing and death. I'm glad I saw one of the kung fu flicks, but I won't repeat it. By the way, I watched the first Kung Fu episode. Nowonder Carradine ran amuck if the scripts are all as confused and idiotic as that one. Mixing ninja, samurai and Manchu Dynasty Chinese together with Tibetan lamas is a bit much, but to add grandmother/grandson incest as well... I saw the last part of Night Stalker and it looked good. I also saw its rating and it'll be lucky to survive one more episode. Being a Brenda Vaccaro fan, I enjoyed the episode of Sts of San Francisco she was in; she played a contract killer. Oh well, I enjoyed it a goodly bit. Other TV included Night of the Lepus where Arizona is threatened by giant bunny rabbits (gee, I learned rabbits are carnivorous). Somehow, even a 150 lb rabbit doesn't terrify me in the least. Ah, for the days of Crusader Rabbit. I doubt if anyone but Grant Canfield remembers CR. By the way, Grant, Ifinally figured out what's wrong with Stark's writing...he's British. He knows his stuff about the mafia, etc but the way he puts the words together is a bit odd. Frogs is on tonite and Willard next week. I really prefer the good old bug movies. For that matter, The Birds.

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So, TV looks just like it did before. Boring and silly. I've had the chance to watch a bit more, tho, because of the radical changes my occupational status has gone thru in the past 2 yrs. I no longer build atomic bombs for the govt (and I'm not telling which govt). I sold fishheads for a yr and sold out to the mob (they made me an offer I couldn't refuse) in June of this yr.' Since then, I've been goofing off, travelling a lot and utterly enjoying the ability to sleep til noon if I please. I'm currently on unemployment and will probably collect that for the 30 weeks or however long I'm eligible. By that time, I should be selling seashells by the seashore. I have a few odd things in the works, all done under pseudonyms, of course. And contrary to the rumor Tackett started, I am NOT Patricia Hearst nor am I Richard Nixon.

I'm really Hank Kissinger. (Don't you wonder who's Kissinger now?)

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My tastes in music remain the same. Currently typing this to the cut Flowers of the Night off Baron von Tollbooth and the Chrome Nun (again thanks, Lana). Also still enjoy the now defunct MoodyBlues, Steeleye Span has been added to my list of favorites.

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I had planned a picture/illo of some kind for the bottom of this pg but I decided to fill it with my words instead. Too bad, better luck next time. By the way, excuse the typing. My thumb was broken a couple months ago and it isn't healed yet. If you want the full story, check it out in Chapter 8 of my next book.

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Bubonicon 6 had FM Busby as GoH this yr. All in all, it was probably the best con Albq has put on and Buz contributed to that proud claim. Not often a con has both a pro and a fan combined as GoH. We even impeached our con chairman 6 months prior to the con. All credit for the con's success goes to Mike Kring, Dick Patten and Byz, of course.

Write and ask about Bubonicon 7. It's already shaping up to be at least as much fun, possibly more if our little hearts can stand it.

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The editors of this fanzine have the courage of their confusions

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Lots more to say, but I always was garrulous in print. Dig Ray Wiley Hubbard & The Cowboy Twinkies! Until next time, this half of the Siamese Twin of Zymur-Worm yields to.....

BUBONICON SIX

(to the tune Piano Man)

by Doris "The Elder" Beeten

It's four AM on a Saturday
A couple of fans stagger in
They flop on the chairs in the lobby
And they're all full of bourbon and gin

They say, "Hey, tell us where did the party go
We just can't find out where it went
But we want some more beer and can buy none, we fear
We're down to our very last cent

Here we all are at Bubonicon
Walking 'round in a daze
And we're asking each other if anyone
Can survive this annual craze

Now Bob from the Zoo is a friend of ours
He writes some porn on the side
And he's quick with a pun so we busted his thumb
That'll teach him not to be so snide

He says, "Fans, all these cons are just killing me
Ever since I'm a dirty old pro
But I'm trying to sell my new novel
Right now I could sure use the dough

Dick Patten's the movie projectionist
And he's here with Kathy, his wife
Well, Mike Kring is the chairman (he's sometimes an airman)
A job full of sorrow and strife

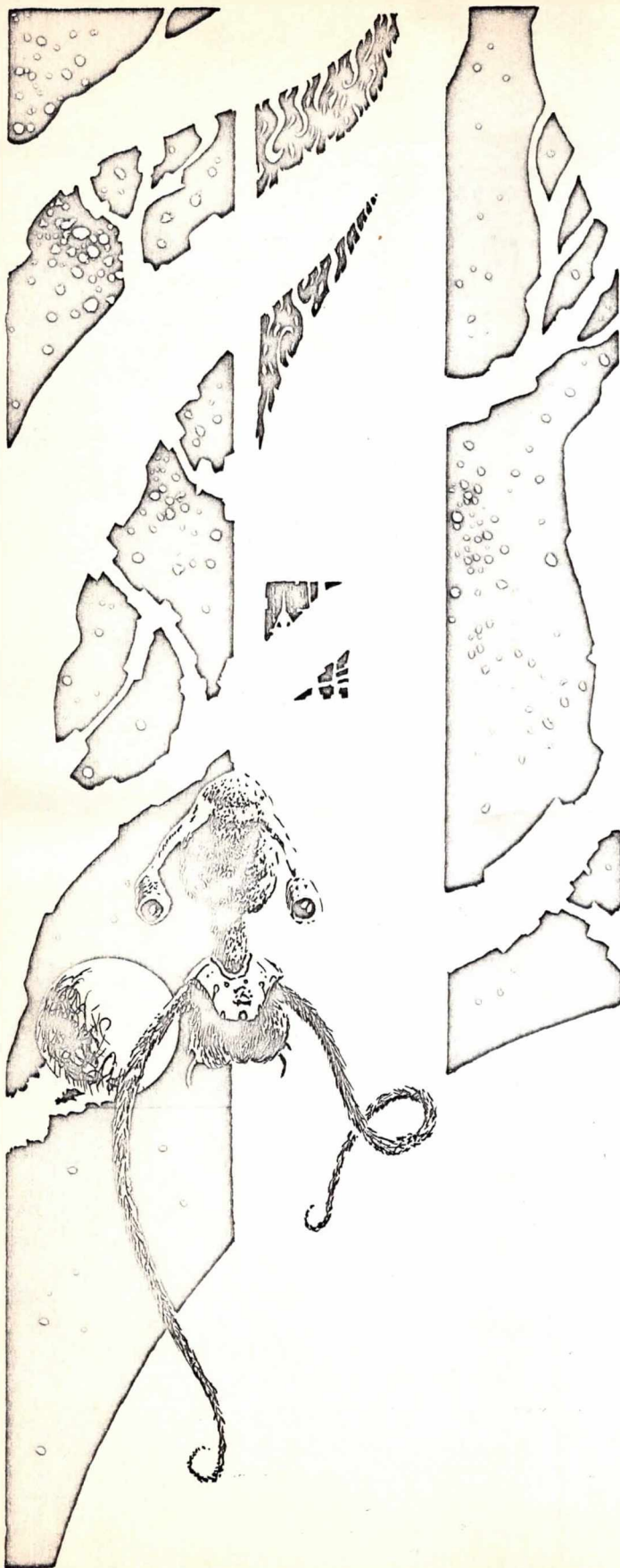
And the SCA's practicing politics
That's traditional in old Al-barran
And the First Church of Scrump was reorganized
On the very last day of the con

Oh, well came to Bubonicon
To have a real good time
We were all in the mood for an SF con
Is that any kind of crime?

There was pretty good stuff at the auction
(At least, that is what I've been told)
And old Roytac was here and so was Jack Speer
And a black widow spider was sold

There were great SF pros on the panel
They were all worthwhile coming to hear
F.M. Busby and Ed (whose books we've not read)
But we'll do it by B-con next year

There we all were at Bubonicon
We partied every night
Though we all were wiped out Monday morning
The weekend was sure out of sight



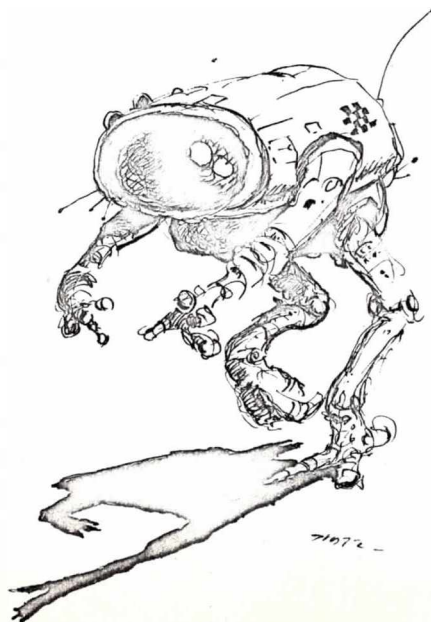
TECHNOLOGICAL
FORECASTING
of
EXTRATERRESTRIAL
CIVILIZATIONS

by Al Jackson

"If you do not expect it, you will not find the unexpected"

-Heraclitus-

TECHNOLOGICAL FORECASTING OF EXTRATERRESTRIAL CIVILIZATIONS is a supplement to Sandworm #20. Reproduction by the hand and machines of Dick Patten; artwork by the redoubtable Jim McLeod. Charts and text by AL JACKSON, relativistic physicist, formerly of NASA and one or two other places, now at the University of Texas, Austin.



TECHNOLOGICAL FORECASTING OF EXTRATERRESTRIAL CIVILIZATIONS

I. Introduction

If you stare at night at that swirl of stars that spills across the sky, when you lift your head to some particular jewel of light -- does there flash through your mind the image of feathery brow or scaly skull turning eyes in your direction wondering if indeed you are out there? A sobering and fascinating thought that anyone with an iota of curiosity must be compelled to consider.

Long ago the main body of science fiction writers gave up the idea that there might be sentient life in this solar system. These days probes and observations of the nine planets of Sol have confirmed this suspicion that the only walkers and dreamers reside here on this little blue mud ball. On the other hand, this age of (relative) rationalism has struck from us forever the syndrome of anthropocentric thinking. Just as we learned that the earth was not the center of the universe or that the sun was not the set piece of the galaxy, so we must come to accept the fact that we are not unique as a civilization. The stars should be emphasized. Indeed, given that there are about two billion stars in this average galaxy we call the Milky Way, it is just too almighty presumptuous to assume we are the only beings to lay claim to creation.

But I do not want to delve into the origin of life and the philosophical implications thereof. I shall assume that there are extraterrestrials (XT's) and ask the question ascribed to Fermi: "Where is everybody?" Where indeed! Many explanations have been put forward: from the idea that we are so far out in the sticks (not far from the rim of the galaxy) it is a long way to go just

2. Tech.Forecast.of XT Civs.

to see another mediocre society, to the thought that we may be being protected from cultural shock by some benevolent interstellar anthropological agency. We are "on a reservation," so to speak.

In the face of the fact that we have not (as far as we can tell) been in direct biological contact with XT sentient beings, the greatest amount of effort has gone into exploring the possibility of interstellar electromagnetic communications. There is a moderate amount of material to be found of this subject (1,2). It is not really the subject I want to examine though I will need to touch on some aspects. What I want to do is to consider the possibility of what might be called indirect observational evidence for XT civilizations.

If XT's are not deliberately trying to get into contact with us, they may be doing things which are observable on an astronomical scale. I want to consider this in the light of technological growth (anthropocentric as it is). One can try and be general and look at population growth and energy use. This leads to possibility of the modification of astronomical environments in the form of Dyson and Fremlin civilizations. Also, advanced societies should be capable of interstellar flight, the many modes of which can also present us with direct observational effects.

There is a caution. Arthur C. Clark's third law says that: "any sufficiently advanced technology is indistinguishable from magic." Therefore, an advanced civilization may be capable of anything, and I mean anything! So I will restrict the meaning of "sufficiently" to reasonably pedestrian super civilizations.



3. Tech.Forecast.of XT Civs.

11. Distribution of Technical Civilizations in the Galaxy

Sagan and Shklovshii give the following quantitative estimates of the number of extant advanced civilizations in this "communicative phase" in the Galaxy:

$$N = R f_p n_e f_l f_i f_c L$$

R = the mean rate of star formation averaged over the lifetime of the Galaxy

f_p = fraction of stars with planetary systems

n_e = mean number of planets per system suitable for the evolution of life

f_l = the fraction that develops life

f_i = the fraction with intelligent life

f_c = the fraction of these that develops civilizations in a communicative phase

L = lifetime of a technical civilization.

There is no need to go into the technical details of estimates of the numerical values of each of the quantities involved. Suffice it to say that Sagan and Shklovshii arrive at the number:

$$N = 10^6$$

or about .001 per cent of galactic stars have advanced civilizations. The average distance to the nearest one is about 1000 light years.

I think it should be obvious in the estimate given that what we are really looking for is ourselves. In particular, the quantities f_c and L , which are given the value 1/10 and value range $10^2 < L < 10^8$ (years) respectively are highly suspect.

For instance, if I understand correctly, we really do not know for sure why we changed from a hunter-gatherer society to an organized

4. Tech.Forecast.of XT Civs.

agrarian one. Even though present technical society gives us a better control over our environment and thus a better survival attribute, it is still not clear just why this should be so. The process of cultural evolution seems to give nature more for her money than should could have reasonably bargained for.

The upper limit for a technical civilization's life time is given to be the lifetime of the local star. Which, by implication, means that ultimately a civilization is still dependent upon its local astronomical environment. But we know that we are ~~ansurviving~~ surviving civilization because of control of our environment. So it is more than likely that an advanced civilization may have spread itself away from its origin star. Put simply: interstellar travel should make any given race totally independent of its local astronomical environment. This could have a mighty effect upon L.

The motivation for my consideration is due to Freeman Dyson ~~and~~ and gets me to the heart of the matter I wish to discuss. To quote Dyson; ". . . If there are millions of places in the universe where technology might develop, then we are not interested in guessing what an average technological society might look like. We have to think instead of what the most conspicuous out of a million technologies might look like." This leads Dyson to three rules:

(1) Think of the biggest possible artificial activities, within limits set only by the laws of physics and engineering and look for those;

(2) Assume that all engineering projects are carried out with technology which the human species can understand. [In order to avoid Clarke's third law.]⁷

(3) Ignore questions of economic cost for they operate as a short-time scale.

5. Tech. Forecast of XT Civs.

Dyson then concentrates on a civilization driven to the "Malthusian" limit. This is interesting because when you look at the exponential and hyperbolic population growth curves for present mankind, you cannot but be struck by a remarkable thing. Would Malthus have believed that the earth could support a population of 3.5 billion? It does so by means of technology. I remember 10 years ago people predicting the famines of the early '70s. They may still happen, but who predicted the "green revolution". There was, as Clarke says, a failure of prophecy. This leads me to make the bold-faced statement that technology can be made to support as large a population as one can imagine. I will show now that this leads to a ridiculous conclusion. Also it is obvious that unlimited population growth has not taken place in the universe, by the very fact that we would at this moment be up to our armpits in BEMs.

THE FREMLIN CIVILIZATION (4)



British physicist J.H. Fremlin has proposed an "agoraphobic" possibility for the earth. His construct is a CAVES OF STEEL-WORLD INSIDE raised to the n-th degree. Fremlin's basic postulate is that it should be possible to support an exponential population growth by technological means. This proposition has been noted before and though its implementation is highly improbable, Fremlin carries it to a possible conclusion. Fig. 1 and 2 present Fremlin's projected model, with embellishments and further extension added by me. (Fig. 1 and 2 are log graphs of $N = N_0 e^{rt}$, N_0 = number of people in 1960: 3×10^9 , r = present rate of increase 0.02, and t = time difference)

2100: In order to set up what follows there must be an organization of information and resources. Postulate a large complex self-optimizing artificial intelligence which runs the world along a "general systems" approach. Of course, the first plan an intelligence would implement would be to control population. Thus it would have to be programmed with a philosophy like that created by Silverberg for the Urbmon world.

2200: The complete elimination of all land wildlife (a la Silent Running?), the agricultural use of roofs over cities and roads, the elimination of meat eating and the efficient harvesting of sea food (4).

2330: All sea wildlife removed and replaced by the most useful organisms growing under controlled conditions with the optimum concentration of carbonates, nitrates and minerals. Each person would have a little over 160 sq. meters for his maintenance. (4)

2550: 100,000 people per sq. mile. Of course, all the land area is covered by Urbmon-like structures. Food must now be synthesized from inorganic materials.

2750: Although waste heat from energy would have already presented great problems for the air conditioning which now must be able to handle 10^{17} watts of body heat. Fremlin stops at 2850: with 120 people per sq. meter of the earth's surface.



The earth is covered by a steel shell 200 stories thick hermetically sealing the outer surface of the planet. The waste heat is just radiated to space from the outer skin, which is now at a temperature of 1000°C . Fremlin takes this situation as the upper limit of growth because further disposal of waste heat becomes a problem.

Why should waste heat be "waste". Surely the technology of 900 yrs hence would have known for some time how to put all energy to some purpose.

3000: To take up where Fremlin leaves off, let us suppose that a "two cubed" law has been in effect for some time, that is there is one person for 8 cubic meters. The top 10 km of the earth's crust is converted into people and a 4000 story spherical shell steel building. Imagine a growing honeycomb structure essentially at the density of water. If we figure that energy acquisition and use is no longer a problem, then usable mass becomes a consideration. For about 600 yrs the earth serves as a suitable source at the given rate of growth.

3600: World Intelligence must start reaching out faster and further in order to supply the materials needed to build a world for its growing agoraphobic population. So the moon must be broken up for its mass. Of course, it is supposed that the same order of technology that made it possible to gobble to the core of the earth for materials will make it possible to dissociate all the planetary material in the solar system for usable mass. This material will have to be mostly converted to steel and people probably done in some high-order fusion process, that is the by-product of energy production will be localized nucleosynthesis !

3700: Care must be taken to build a structure such that the solid state forces which support it are not overwhelmed by gravitation. This means that the average density and central pressure must not increase too sharply. This can be done by increasing the radius of the world and by spinning it up some. Some "degeneracy" of matter will probably have to be accepted near the core, but

nobody will be living down there. (For that matter no one will be able to live near the surface where they would be crushed by the growing gravitational field. Advantage will be taken of the fact that inside a solid body the acceleration due to gravity goes like that due to a harmonic oscillator potential, thus people will be living in a shell way down.)

In order to bust up the solar system a substantial amount of solar energy must be intercepted in order that the planets can be used up. 10^{35} watts of power will ~~xxxx~~ have to be expended in order to over-come gravitational binding energy.

3750: Disassembly of the sun must be planned towards the end of solar system bust-up. This really presents an energy problem. For the gravitational binding energy of the sun is 10^{48} ergs, so that an expenditure of 10^{40} watts over a period of 100 years must be realized. It is not clear how such a project could be done. But if the now very advanced WORLD INTELLEGNECE ~~xxxx~~ does not find a technology to control this amount of energy it will not be able to meet its mandate of population increase.

3800: Several hundred years before dissociation of the sun is started a small fraction of matter is set aside and sent in the form of an automated instrumentality to Alpha Cenruri, where it builds itself into a large matter gobbling factory. The matter is beamed back to the "earth" in the form of energy and is reconverted to useable matter.

We thus visualize a sphere (steel and water) 10^{10} cm in radius. World Intellegence reaches a dilemma. It will know that there is an upper limit to the amount of "cold-catalysed" matter that can be brought together ^{at} ~~one~~ one spot regardless of how well one adjusts the radius and

angular momentum of that matter. The rational part of World Systems Intelligence, in the face of the paradox now presented, will probably go bonkers. If the automated regulating, building and receiving equipment stay in operation then upon reception of .2 to .4 solar mass and its incorporation into the structure the whole configuration will undergo gravitational collapse. Neatly solving the population problem, all of humanity crammed down a black hole. (All 10^{25} of them!)

Therefore growing populations and technologies are capable of big things. Soviet physicist Kardashev classifies civilizations into three types. Type I with an energy use of about what we have now on earth, that is 10^{12} watts. Type II using about the energy of the sun, 10^{26} watts. Type III using the energy output of a typical galaxy or 10^{37} watts. Would these civilizations produce non-deliberate observational evidence of themselves?

Dyson Civilization

Ringworld by Larry Niven is a deviant on a Dyson civilization, although there the desire was for more "lebensraum" than the use of energy. Dyson feels that a civilization driven to the aforementioned "Malthusian Limit" (whatever that means) will have need for a technical energy base of 10^{12} watts, or more, of energy. This is the typical energy output of a G-K type star. Dyson details (3) how planets can provide the material to build a sphere capable of intercepting most of the radiant energy from a star. A sphere constructed at one A.U. would come to thermodynamic equilibrium with its environment at about a temperature of 200 to 300 degrees Kelvin, and radiate at around the 10 micron wavelength in the infrared. Dyson has proposed that we might look for such infrared sources as evidence for extrasolar civilizations.

Year

3000
2950
2900
2850
2800
2750
2700
2650
2600
2550
2500
2450
2400
2350
2300
2250
2200
2150
2100
2050
2000



Top 10 Km of Earth's surface converted into building (4000 stories high covering the surface Area of the Earth) and people.

Earth encased in a metal shell dumping heat by means of Radiation. 120 people per square meter.

2750 Refrigeration problem. Must be able to dump $\sim 10^{17}$ watts of Body heat.

2650 Direct conversion of rocks to food. Two persons/square meter.

2550 total area of Earth covered to "Manhattan Lunch hour" density about 100,000 people per square mile.

2450 Need for world energy consumption of 10^{29} erg/sec. Power output Now completely in the form of Hydrogen Fusion.

2370 Land surface area of the earth covered with 1 person per 160 square meter Planetary colonials called back.

2220 complete elimination of all land wildlife elimination of meat eating.

2100 world Brain, A total "General Systems" approach to world organization.

2000 colonizing planets, Artificial Intelligence.

9

10 11 12 13 14 15 16 17 18 19

$\text{Log}_{10} N$

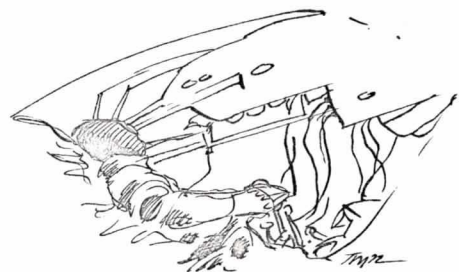
Fig. 1

YEAR

3200
3150
3100
3050
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700
3750
3800

19 20 21 22 23 24 25

$\log_{10} N$



END

End point reached when the total amount of material sent back from d-centuri is equal to $.2 = .4$ solar masses. We have a sphere of radius 10^{10} cm. But now adding $.2$ solar mass causes gravitational collapse to a Black Hole.

Sun nearing completion of disassembly
Solar system converted.

Earth and Moon have been converted into one big spherical Honeycombed structure. Massive amounts of energy are turned upon the solar system.

Fig. 2

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- (1) Sagan and Shklovski, Intelligent Life in the Universe, Holden Day, N.Y. .
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PUT DOWN YOUR DUKES...or...THE HOUSE WITH USHER

(or, maybe, HOW WRIGHT IS THE WAIN?)

all by Dave Locke

I've been going to the movies quite a bit lately, ever since I watched the Academy Awards Presentation and saw film clips from the various nominees. And, after seeing all the films that I cared to from among those nominated, I decided to see a few others that sounded interesting.

One of those that sounded interesting was DIAMONDS ARE FOREVER, the latest James Bond flic. They had done one without Connery, but he was back for this one. Maybe he couldn't make it anywhere else.

The other show playing with the Bond film was THE COWBOYS with John Wayne. I wasn't particularly interested in seeing that one, but it was there so I watched it.

This was early on a Saturday afternoon at the Hastings Theatre in Pasadena. For some reason, Hastings likes to run a movie until they're sure that everyone in southern California has seen it. This particular duo had been running for three weeks. Before that THE COWBOYS had been playing with something else for two weeks. And before that it was playing with something else for another two weeks. I'm writing this about three weeks after I saw COWBOYS and DIAMONDS, and both are still playing.

There were about eight people in the theatre, including me and the usher.

No one was wit in five rows to the front or back of me, until this young girl came in with a granny dress and sneakers.

"Hi. I'm from Berkeley, visiting relatives. You don't mind if I sit here?" She dropped her purse on my foot.

"No, of course not," I said. "Did you bring the popcorn?"

"The movie won't start for another five minutes. Shall I get some?"

"No thanks. I guess I really don't want any." She had short brown hair, big brown eyes, a big brown granny dress, and a big brown purse which I had moved from my black shoe. It clashed.

"I came here to see John Wayne die," she told me. "You know, when my friends saw the movie up in Berkeley, the audience stood up and cheered when John Wayne died."

"I thought people were anti-violence up in Berkeley" I said. "That doesn't sound anti-violence to me."

"It's all a matter of perspective, sweetie. Are you with it or are you with it?"

"I came here to see DIAMONDS ARE FOREVER. Whether or not John Wayne dies in THE COWBOYS is of no particular interest to me."

"They're starting the movie," she said. "John Wayne is the symbol of everything that's bad in this country, and I'm eager to see him get killed even if it's just in a movie." She stared at me. "Aren't you involved?"

"\$2.50 is a cheap involvement."

We watched the cowboys, who turned out to be a bunch of early-teeners herding John Wayne's cattle. It seems that gold-fever had infected the countryside and old John Wayne couldn't round up any other hands to make a drive. So he got himself a bunch of kids and a black cook and decided to make a go of it.

Three grown-up fellers rode in and wanted to join up, so Wayne asked them where they'd been working. They read off their verbal resumes and ended with: "We've been working with so and so for the last eight years."

"That's odd," Wayne told them. "I was a pallbearer at his funeral five years ago."

"Well, I guess you caught us in a lie," the leader said. "We just got out of prison and we tell folks that and they don't want nothin' to do with us."

"Well, you can ride out of here, too," said Wayne.

"You mean cause we been in prison you won't hire us, neither?"

"I don't hold jail against nobddy," Wayne said sternly, "but I hate liars."

Good old

John.

Anyway, Wayne and the boys and the black cook (who was the best actor in the movie), moved out the cattle. But the three baddies rounded up a whole mess of other baddies and they were going to steal the cattle, you see. But not until Wayne and the boys had done most of the work and were just a day or so away from the end of the drive, you see.

Came the

scene where the bad guys rode in. The cook was back down the trail fixing a broken wagon-wheel or something, so big John was alone with the boys. Big confrontation scene in the clearing, it was. The lead bad-guy was pushing one of the kids around.

I turned to the granny

dress and sneakers. "Watch him tell the bad guy to pock on someone his own size."

"Why don't

you pick on someone your own size," said Wayne. Or something to that effect.

"You're an

old man," sneered the bad-guy.

"Watch this," I told her. "He'll say that on his worst day he could beat the crap out of the bad guy."

"On my worst day I could beat the hell out of you," said Wayne. Or something like that.

So the fight ended with Wayne banging the guy's face, repeatedly, against a tree. The guy didn't like that, so he emptied his gun into Wayne's back as Wayne was walking away from him.

"HOO-RAY!!!" shouted the granny dress and sneakers.

The other five people watching the movie turned around and looked at us. The usher woke up and looked frantically around, trying to figure out what had woken him up.

"YIPPEE!!" she screamed, beating her fists on the arms of the chair. She did it so fast that she hit my watch three times before I could get my arm off the armrest.

Now the

usher spotted the trouble, and came marching double-time towards us.

I tried to pretend

there wasn't anyone seated next to me. That was easier than trying to pretend that there wasn't anyone in my seat.

"Ok you two, out," the usher said, meaningly.

"Don't bug me, creep,"

she told him.

"Out, sister, and take your friend with you."

I cleared my throat. "I'm not

with the lady," I told him.

He looked at her and then looked at me. And then looked at her again.

"No, I guess not," he said.

"Listen, creepo," she warned, "leave me alone or I'll make a scene." She hefted her big brown purse in her right hand, as though it were a rock.

Under his pimples the usher's face was rather pained. "You're disturbing the other patrons, Miss. You'll have to go. Scene or no scene."

She set the purse down and looked doe-eyed at him. "I won't make any more noise, I promise. I just got carried away when I saw John Wayne get killed. I won't yell out any more. Honest. Please let me stay. I'm sorry."

The color went back into his pimples, and he relaxed a bit. "Ok," he said, "but any more noise and you'll have to leave." He went back to his post against a pillar

and stared at us.

She turned to me. "Did I miss anything?" she inquired of me.

I coughed.

On

the screen, the boys had just buried Wayne. Then they jumped on the cook, hog-tied him, and started breaking out the guns from the wagon. One boy strapped on a pistol that reached down to his ankle. And then off they went, after the bad guys,-

"You boys got a plan?" asked the cook.

"No."

"Well, untie me and we'll make a plan."

The rest of the movie was dynamic. It was about how the boys took vengeance on all the bad guys. I remembered reading a review in TIME or some place where they condemned the idea of boys murdering all the bad guys, but I still think that part of the movie was dynamic.

DIAMONDS ARE FOREVER was sub-par Bond. Nothing at all like the book, and Connery is beginning to look a bit seedy. The whole thing was played for laughs, and they substituted an extra dose of humor for the usual special spectacular effects that the Bond films have been noted for. It was amusing, but sub-par.

The lights came on in the theatre and the other five 'patrons' moved quickly to avoid the mass exodus. Just habit, I guess.

Sneakers looked at me.

"You wanna come to a real groovy party with me? It'll be bitchy."

I said, getting up. "That's what I'm afraid of,"

"How old are you?"

"Twenty-eight."

"Oh...."

"But I think you've made a hit with the usher. See, he's looking at you now."

"Oh?"

"His pimples are throbbing."

She

went over and snapped her chewing gum in his face. I could see that it made a big impression on him. When I walked out of the theatre I could see that they were standing in line to buy popcorn.

I haven't been to any movies since then.

DAVE LOCKE

Note: This is Vardeman intruding at the bottom of Dave's article. I feel guilty about holding this article for almost two years, but, as with any good writing, I don't think it's at all dated. I mean, Diamonds Are Forever hasn't been on the idiot eye yet (I just saw Thunderball on the groove tube last week). Of course, Roger Moore has replaced paunchy Sean and the second movie will probably be out within a month after you read this, but....

Such are the vicissitudes of fan publishing.

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I was contemplating an Ed Cox Dooële here: space but there's not really enough room left. Therefore, I'll spend some time filling it in. Like, learn from the mistakes of others because you'll never live long enough to make them all yourself. or...Blessed are the censors for they shall inhibit the Earth. or...This is National Earth Week, take a clod to lunch. or...Progress is our most important product, but we can't sell it. Thanks to Kay Anderson for letting us know that the patron saint of the Black Plauge is St. Roch.

This is the entire lettercol thish. One small letter. The actual forreal date is the fourth of August, 1974. Keep that in mind. Some of Dick's letters nextish.

GEORGE FERGUS: 3341 W Cullom, Chicago Ill 60618::: I would comment on the (cybernetic) sandworms, but your wit seem rather complete unto itself. Commenting on something from 1972 would seem rather strange, anyway. /Not as strange as putting out the next issue 2 yrs later.7

Still can't believe you liked UFO. Most of the episodes simply had SF window dressing on a perfectly mundane story. It could have been a war series as easily. Not that it necessairly makes it bad, but I will put up with more nonesense in a real SF show out of loyalty. All that was left in UFO once you took out the gadgets was typical British tales of marital troubles and the like. Shall I go into how I can't believ3 you like E.C.Tubb and Dean Koontz either? Better not. /You, obviously, are a gear and grommet lover. If UFO had come up with a new gear or grommet every week, bet you'd've liked it. Frankly, it was far better than anything Irw4n Allen has come up with...I still shudder at the thot of the sky, er, vanAllen belt, catching fire. And I make no apologies about my taste in literature. By the way, did you hear about the queer electron that went around blowing fuses? I make no apologies about my jokes, either...7

Al Snider's article hit me where I live, as I am one of those facelss observer rather than participant types that clutter up our cons. (Al may include me in his next article under the alter-ego of George Gaspgland). But after all, would you want 3000 people at your room party? And who would attend the program if it wasn't for us? /If some of the more militant fans have their way, you may be attending the pogrom...7

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This is all the space I'm allotted. Write Dick. He'll explain our policy of trades (one of yours to him, preferably, or me is sufficient...you need not mail to both of us unless you feel the urge to screw up the bookkeeping). He'll Tell All in his pages. Til next ish, aid-eee-oooooooooooo's y'all!

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