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NUMBER EIGHTEEN

FEBRUARY 1986

Registered by Australia Post - Publication No VBH6727

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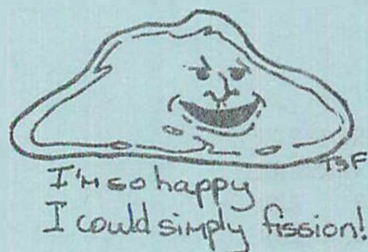
Tigger is the official organ of the Australian National Science Fiction Association.

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AUSTRALIA. (Material addressed to GPO Box 2708X will still reach me eventually, for a while.)

A PEPPERMINT FROG PRESS PRODUCTION  
In association with Eccles the Microbee

## STAIRWAY TO CLEVELAND

TIGGER is putting on weight. He's not his usual bouncy self, and has, for this issue, outgrown his cover and his letter column. His personal vet has suggested that he lay off the malt extract for a time, but until he slims down a tad, certain things are going to have to be cut. The juicy Harry Warner LoC will have to wait until TIGGER 19, as will tasty articles by David Cropp and Craig Hilton. There's a particularly calorific (should that be joulerific now?) piece by John Alderson that TIGGER is going to have to put off until at least half-past June. TIGGER will also have to cut down on all that delicious fattening artwork too.



Twenty pages isn't much room, and the vet seems to have enlisted the help of the post office, who charge TIGGER a hefty fine should his weight exceed the niggardly amount that they think suitable for a TIGGER of his age. Thus, for the while, TIGGER is going to cease to pretend that it might be a newszine. (Vestiges of its newszine ancestry may be seen in its appendix - the AUSTRALIAN GUFF NEWS-LETTER. Even this though has been removed from copies leaving the country.) I have received an assortment of information on KINKON 2, SYNCON '86, GALACTIC TOURS CONVENTION, and on the plans to revamp the Australian National Science Fiction Convention Constitution. If you would like information on any of these, either write to me, or, to make life easier for all of us, subscribe to either THE NOTIONAL - Leigh Edmonds & Valma Brown, P.O. Box 433, Civic Square, A.C.T. 2608, (\$10-00/12 issues in Australia); or THYME - Roger Weddall and Peter Burns, P.O. Box 273, Fitzroy, Vict 3065 (\$10-00/10 issues in AUSTRALIA.)

Life Chez Ortlieb is gearing up for the 1986 School Year, following our overseas jaunt. Tasmania is a pretty little country. Preparations for the school year include Cath organising her files and reading the H.S.C. recommended reading books, and me procrastinating like mad, putting off typing up the science faculty handbook, and getting this issue together. A further source of procrastination is just around the corner. Cath's father, who built us a superb set of floor-to-ceiling paperback bookshelves, is kindly making me a set of floor-to-ceiling fanzine shelves. Getting my fanzines in order should keep me quite busy for the next few months.

TIGGER 19 looks like returning to evolution as a major theme. Indeed, evolution seems to have annexed this issue. I want to tackle the idea of punctuated equilibrium in a little more detail, and there are letters that need more space. Deadline is Middlemarch. I'm also interested in running a series of short pieces on the joys of trying to get science fiction published. If you'd like to publicize your collection of rejection slips, feel free to write.

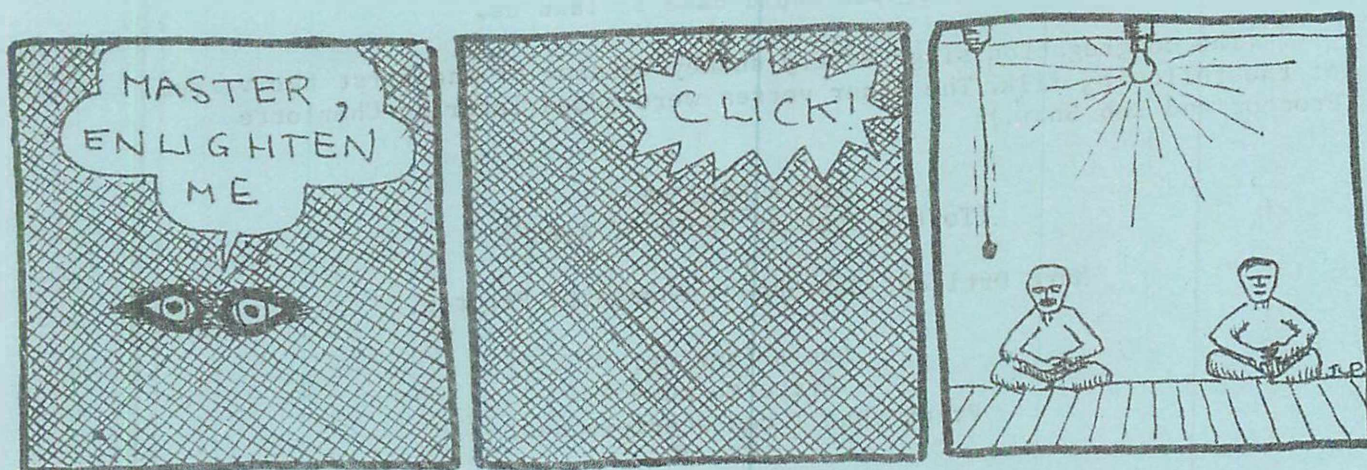
Until next issue then, keep smiling, and nil illigitimus carborundum.

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I was thinking about developing a dynamic editorial presence but never quite got around to it.

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### I HAVE SEEN THE LIGHT

[While planning the programme for AUSSIECON TWO, the Programming Subcommittee was looking for something light and silly that would involve media fans and fannish fans. David McDonnell, an ex-editor of the STAR TREK fanzine CAPTAIN'S LOG, came up with something we thought suitably silly - an old-fashioned revival meeting, with media fans exhorted to cast off their phasers and uniforms in order to worship at the true altar of fandom. For it to work, we needed someone who could do convincing Southern Baptist preacher impersonations. Fortunately I'd met Jim "Speaker to Yankees" Gilpatrick at the 1981 Deepsouthcon, and thought he'd be ideal for the job. That he was planning to be one of Confederation's representatives at AUSSIECON TWO meant that he was available. Thanks must also go to Linda Lounsbury and Ann Poore who volunteered to help the show.]

The item took place at a disgustingly early hour on the Sunday of AUSSIECON TWO, in the Sheraton Hotel, with the result that we had few in the audience. The following is a transcription from the tape - sound operator for that may or may not have been Zebee Johnstone.]

MARC ORTLIEB You know why you are here today. You are here because you are sinners. You are evil foul sinners, each and every one of you. You know that, if you were not here, you'd be damned to Hell, so, cowardly, you turned up. . . not like the other twelve hundred sinners who've been spending late nights at room parties and so have not been able to make it to this inspirational speech. But you at least have shown some signs that you are worthy of salvation. You have shown signs that you are worthy of joining that greater assembly that will eventually reach its way to Nirvana and the Enchanted Duplicator. Therefore Ladies and Gentlemen I would like us all to start with an inspirational hymn. We will start with Hymn 472 "LoC a Fanzine". Before we start I'll remind you of what the Sacred Words mean. The word LoC is to write a Letter of Comment. Stencils, typewriters, all these impliments of our religion which we follow so dutifully and so gainfully in producing the word of Ghod in its highest form - the fanzine. The tune you should know - "Rock of Ages". Sister Ann, are you in the audience? Sister Ann?

ANN POORE I am indeed good brother.

MARC ORTLIEB Sister Ann, if you would care to lead us.

[The congregation sings a very shakey version of the first two verses of the following filk. The other verses were added later by Charlotte Proctor and Bob Shaw.]

LOC A FANZINE  
(To the tune of "Rock of Ages")

Marc Ortlieb, Bob Shaw & Charlotte Proctor.

Loc a fanzine;  
Write to me -  
Print that I can scarcely see.

Over-inking,  
Stencils torn,  
Typer keys so round and worn.

- MAO

Write a letter;  
Post it off;  
Wait until you are a WAHF.

Start a rumour,  
Then you scoff.  
It's the only way to SMOF.

- Bosh

Harry Warner  
Write to me;  
Then I'll publish regur'ly.

Egoboo is  
Knowing when  
You've become a well-known fen.

- cp

MARC ORTLIEB Ah. It's been a while since some of you have been in the true church. I think we'll forget that one for a start.

May I introduce to you our guest preacher for today - The Very Reverend Jim Gilpatrick from Terre Haute. Jim is not originally from the evil sinful ways of Indiana. He went as a missionary there from the true South where all the true religion comes from. He is a Southern Preacher in the best tradition. Let's hear it for the Reverend Jim Gilpatrick.

AUDIENCE Applause

JIM GILPATRICK Friends I'm just so happy to be here today. Now you're going to have to get a closer in here. You cannot hide from the light of salvation on the back row. Do gather in, gather, closer please, please, if you're to hear my words properly.

Why are we gathered here today friends? We're gathered here to discuss salvation and redemption, sin and evil, goodness and justice, truth and the sf community way. Yea even though there are those who have fallen away; do not yet know the blessed bliss of the Enchanted Duplicator. Perhaps they have heard of the Towering Inferno that awaits them when they are old fen and tired.



As Chu, Foo and Roscoe tell us, Grace can be achieved but the path to true fannishness is hard: past the Mountains of Inertia; past the Letterpress Pass; the Veil of Serious Constructionists; past the City of Clubs; through all the travails until, at last, you shall know the blessed relief of grasping, though ye be unworthy, the shining crank of the One True Duplicator. Some of us in this room are fortunate enough to have experienced this. Others have not yet known this blessed state.

And how can this blessed state be achieved? And how can the inferno be avoided, even though you might have paid \$4-95 to see it? Beware the idolatrous abominations of the media sinners: the films . . . the Star Wars Action Figures [AUDIENCE GROANS] . . . the comic books . . . the photo novels [LOUD AUDIENCE GROANS] . . . and the Star Trek Blooper Reels! Give up!! Give up these symbols of your decadence. As the great Saint Tucker tells us, "No staples are required."

Why did he say this? Who knows? Saint Glicksohn said "Eh. Who cares?" The ways of the masters are mysterious to us.

But learn the secret handgrip of fandom. Why? So that you can learn to avoid the unclean. Some of you are saying to me, "Why Preacher Jim Preacher Jim, why? Why me?" You . . . you because you could be saved, even those of you who are the miserable red-shirted Trekkies can be saved. You can be blessed with the sacred Bheer of Fanac, that magic fluid.

I'd like those of you who feel the true power of fanac floating through the room to come down to the front and join me and express your true faith. Do we have any testimonials in the audience? Someone who is a former sinner who's been saved and would like to speak and inspire our group today. Do we have someone like that?

LINDA LOUNSBURY Hallelujah!

JIM GILPATRICK Ah Sister Sister. I'm so glad you're here. Here tell us; witness for us. Tell us of your experiences.

LINDA LOUNSBURY Well, I started out when I was only sixteen. I . . . I watched STAR TREK. [AUDIENCE GASP] And every night, every Friday night I was glued to the set. And, when I went away to college, I used my grandmother's savings to buy a tape recorder. I told her I was going to buy textbooks. [LOUD AUDIENCE GASP] And I bought that tape recorder and I tape recorded every episode of STAR TREK from syndicated reruns. And I listened to those night and day. But then I read a science fiction book and I SAW THE LIGHT! And I went . . .

AUDIENCE Hallelujah!

LINDA LOUNSBURY Bless me brother.

JIM GILPATRICK We shall now make over her head the secret symbol of fandom. [He does so. I shall not attempt to describe it to you. Those of you who need to know what it is will know. It is uncliquish to reveal it to one who was not present.] Remember it well. Do we have any more testimonials from the audience? Anyone else? This person right here has something to tell us. [Bob Ogden abandons the follow spot and comes to the front.]

MARC ORTLIEB Not only has he seen the light but he operates it.

BOB OGDEN I was a miserable sinner. I used to watch re-runs of LOST IN SPACE!

AUDIENCE Horror!

BOB OGDEN But I HAVE SEEN THE LIGHT! I am now a true believer!

JIM GILPATRICK You've been blessed. And now go back to the light, and make sure it stays on my face. Are there any more testimonials? Anyone else? Anyone really feel the power flowing through this room at the moment? Can you feel it? Can you feel it? David, you have something to say don't you?

MARC ORTLIEB Keep to the script please. We have a hymn yet.

Before we have our Audience Figure to give his testimonial to how he has SEEN THE LIGHT, I would like everyone to join in with Hymn Number 1098, entitled "We are SF Readers". Sister Ann. . .

WE ARE S F READERS

(To the tune of "Onward Christian Soldiers")

We are S.F. Readers;  
Media we abhor.  
We like Clarke and Heinlein,  
Asimov and more.

We like Larry Niven;  
We read Philip Dick.  
We think all that television  
Only makes you sick.

We are S.F. Readers;  
Media we abhor.  
We like Clarke and Heinlein,  
Asimov and Moore.

We are S.F. Readers;  
Readers we'll remain.  
We'll fight film's invasion  
With our might and main.

We'll read only good books;  
We'll shun all the bad.  
Watching things on silver screens  
Is bound to drive you mad.

We are S.F. Readers;  
Media we abhor.  
We read Clarke and Heinlein,  
Gene Wolfe and Bob Shaw!

---oOo---

JIM GILPATRICK Thank you Brother Marc for that wonderful introduction to that fine, fine hymn.

MARC ORTLIEB Fine old song it is Reverend Jim.

JIM GILPATRICK I'm just so proud to be here today with all of you good people. This is such an inspiration to me to know that, even here in this far off, far off place, so far from where I come from, that there are people that share the true religion. It's really exciting to me, and now here's Brother David who's going to give his testimonial.

DAVID McDONNELL Thank you. My tale is perhaps the saddest of all. Not only did I watch all the episodes of STAR TREK; I also had people wake me up at five o'clock on a Sunday morning so that I could watch the Animated episodes.

AUDIENCE Great lamentations and wailing.

DAVID McDONNELL This then progressed. I mean it, like any addiction, it gets worse. I ran a Media Convention.

AUDIENCE Further wailing.

DAVID McDONNELL But this, this was the turning point because, by some dreadful mistake, we actually had an author as our guest of honour. And I discovered that there were these things called books. So I, with trembling hands, picked up one of the STAR TREK photo-novels. And I couldn't believe it . . . I mean here, in this constantly available portable source, was something that my whole life had been built around.

And then I discovered that even photo novels weren't enough. There had to be more words. And I picked up the James Elish adaptations of the STAR TREK scripts. And still I discovered that there were concepts that had never even been touched upon by STAR TREK. And this heresy threw me into shock. I finally accepted it as a statement of fact and, knowing that there were people such as Theodore Sturgeon and Robert Bloch and Harlan Ellison who had written for STAR TREK, and realizing that I had seen those same holy names on other books, I decided that it was time to take the ultimate plunge and read a book that was not even media related.

AUDIENCE Gasp!

DAVID McDONNELL And I read Robert Bloch and I read Theodore Sturgeon, and I read Harlan Ellison and, at the end of my first Harlan Ellison book, I knew that I was forever saved. Never again would I be a slave to Media!

JIM GILPATRICK Thank you brother for those inspirational messages. It means so much to each of us here today to hear the words of those who have travelled the road that we are trying so hard to go down. It's a tough road I know; the path is long and narrow but some of us have been able to make that journey and it means so much to those of us who still have so far to go to get there.

MARC ORTLIEB Well thank you Reverend Jim. We appreciate these words of wisdom. I realize that the number of sinners we have here is markedly short but, even though they are small numbers, we might yet receive some form of contribution from the audience. We will be passing around a container for your contributions, and we would appreciate it if you would deposit any used phasers, any old STAR TREK badges, any BLAKES 7 uniforms. . . .

JIM GILPATRICK Those idolatrous symbols . . .



MARC ORTLIEB Place them in the collection bucket as we get Sister Catherine [Ortlieb] to lead them around. Pass them around and I think, since we have some new sinners in here, who haven't had the chance to lift up their voices in song to the Glories of Ghod . . . then we will get Brother Martin [Bridgestock], who has just come in to the room, to perhaps join in and we will . . . I think the . . . no, we'll do the long one. We've got plenty of time.

DAVID McDONNELL We have here a heretic!

JIM GILPATRICK Oh no!

MARC ORTLIEB A heretic?

JIM GILPATRICK How did he get in here?

[David McDonnell points out a fan who has just placed his copy of the hymn sheet in the collection bucket.]

MARC ORTLIEB Burn him. Burn him!

DAVID McDONNELL We must realize he is obviously not mentally responsible.

JIM GILPATRICK We'll give him the ultimate punishment. We'll deny him access to the con hospitality suite.

MARC ORTLIEB We've denied everyone access to that haven't we? [Australian conventions don't often have hospitality suites - not in the sense that Americans understand them. Free coffee is sometimes provided.]

Sister Ann would you care once more to favour us with your voice?  
Hymn 1098.

ANN POORE If you would all care to rise to your feet. . .

AUDIENCE Repeat "We are S.F. Readers".

MARC ORTLIEB Thank you Brothers and Sisters. We will conclude today's service, not with a Final Rosary Benediction, as we haven't invented one yet but just remember the several laws by which you will lead a good and true life:

- First: Thy fanzine shalt never contain fiction.
- Second: Thy fanzine shall never contain pictures of anyone with pointed ears.
- Third: Thy fanzine shall not mention acts of miscegenation between Vulcans and humans, especially should those Vulcans be male as be those humans.

And finally, last but not least:

Shun the gods of mammon. Those who sell their fanzines are an abomination in the sight of the Lhord. Fanzines should be traded not sold. Forever and ever Amen.

---oCo---

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"He could feel her body against his, tense and taught like a bow string."  
"The Custodian" Lee Harding Vision of Tomorrow May 1970  
=====





### LETTERATURE

YVONNE ROUSSEAU To ensure that my mind remains very, very clear, I have  
P.O. Box 8 decided not to read Margaret Giordano's "Big Freeze" before  
North Carlton remarking upon your remarks about it. From your account of  
Vict 3054 the story, the hairy babies are clearly morphically reson-  
ating, in accordance with Rupert Sheldrake's A NEW SCIENCE  
3/1/1986 OF LIFE (1981). Didn't Arthur Koestler call Sheldrake's  
theory of formative causation "an immensely challenging and  
stimulating hypothesis"? Didn't the editor of Nature write, "This  
infuriating tract ... is the best candidate for burning there has been for  
many years"? Aren't several experiments under way even now, to verify the  
hypothesis? (They did; they are.)

Current theory - not just current "knowledge" - is essential to science  
fiction; where would all the oceanic and vegetative Venuses be, if writers  
had waited for verification from inquisitive spacecraft? Clearly your error  
of cluttering your mind by reading "Big Freeze" before commenting on it has  
prevented you from seeing all this. Unfortunately my own freedom from  
similar error prevents me from explaining actual details of the hairy  
resonance - although I can see that the hairy-handed butcher is a mere red  
herring.

[Being quite free of any mis-conceptions that might be engendered by  
reading Sheldrake's work - though I vaguely recall having encountered  
reference to it in New Scientist or Scientific American - I'd tend to take  
the editor of Nature's opinion more seriously than I would Arthur  
Koestler's. Koestler does not have a good track record when it comes to  
backing winning theories, vis his support for the supposed proof of the

inheritance of acquired characteristics - the midwife toad experiments of Paul Kammerer. There's more to science than merely calling something science. If the experiments are under way, then I'll be interested in their results.

My concept of reasonable use of science though does not rule out stories of watery Venus, provided that they were written while there was the possibility that Venus was permanently wet. Now that Venus has been shown to be a hot dry hell then I'd expect a science fiction story based on Venus to deal with the planet in those terms. A fantasy story based on Venus can be as wet as it likes. If the skiffy writer wants to set a story on a water world then he/she will have to go farther afield, and might have to forget the idea of Venerian soldiers going to Earth on R&R.

Stories that use outdated or inaccurate science must be considered fantasy. There's nothing wrong with fantasy; it is as valid a form of writing as is science fiction, and indeed it is impossible to draw a clear line separating fantasy from science fiction on the continuum that separates LORD OF THE RINGS from MISSION OF GRAVITY. I though would put stories that don't bother to tip their hats to current theory on the fantasy side of the line. Thus I won't take their scientific warnings particularly seriously. This leaves "Big Freeze" with little to say, as it does not go into the human implications of what has happened in any real detail, concentrating on what has happened rather than on its effects. Damien's story, on the other hand, can still be read for its philosophical content and for the inter-actions between characters.

I can see I'm going to have to read Sheldrake's book, if only to discover what morphically resonating means. It's a delightful term.]

LEIGH EDMONDS    Tigger is so relaxed that all of the staples but one had  
P.O. Box 433    already fallen out by the time it reached us. This issue is  
Civic Square    not so "dull" as the first of your reworked issues, but it  
ACT 2608        still seems to lack much life. I did enjoy Richard Faulder's  
4/1/86           article and was impressed at your letter column - how can the  
                 use of but one word inspire so much response? Your comments  
                 on the two stories involving ideas of human evolution were  
interesting; partly because they told me a bit about the current state of  
the debate and partly because they also reminded me how difficult it must be  
for the humble sf writer, who has but one brain, to write to a polymath  
readership composed of thousands of readers, each informed in different  
areas. I am currently working up a short description about the new housing  
estate which has been put up within sight of the tower containing the  
Enchanted Duplicator, as my description of Tigger for the fanzine reviews in  
Fuck The Tories.

[I find ripping into the science in science fiction to be one of the things I enjoy most about being a science fiction fan (as opposed to being a faan). Perhaps that is why I've pitched my tent a goodly distance from the Enchanted Duplicator. I might even be coming to the odious conclusion that the Enchanted Duplicator itself is a fascist symbol for those who see fandom as only one thing, and not as the plurality that it is. Does this mean that I get burned as a heretic?

Hmmmm. The Enchanted Duplicator is kept in a tower isn't it? How phallic... Fascist and phallic... perhaps the Enchanted Duplicator is fandom's equivalent of THE IRON DREAM. I don't know about authors having trouble keeping up with the scientific reading. This evolutionary natter has had me doing more research than I did for most of my 1984 biology essays.]



DAMIEN BRODERICK [Damien, in the introduction to his letter, nominates  
10 Marks St reading TIGGER 17 as one of the most embarrassing  
Brunswick moments in his life. He also proves that he is a true  
Vict 3056 gentleman by choosing not to rip into my account of his  
story. He does make a couple of points about my lousy  
7/1/1986 editing of Richard Faulder's article. I will try harder  
in future.]

What I have in mind is Richard Faulder's remarkable new theory of evolution. Focus your mind, dear biology teacher, to a hard diamond-like brilliance:

"... the fundamental tenet of the theory - that a group of organisms with a common gene pool survive and multiply because they are better fitted to that environment than another group of organisms."

Decoding this bold conjecture with the usual syntactical rules of English, we learn that:

"A group made up of members of a single species survives and prospers in a certain environment because it is better fitted to that environment than a heterogeneous group made up of members of diverse species."

An example might be a group of polar bears doing better in the Arctic than would a random selection of animals from the Taronga Park Zoo.

This seems inherently plausible, though Faulder's postulate does not exclude the notion that a nest of bees in the Arctic must do better than a polar bear, a penguin and a man in a woolly singlet. The unusual feature of Faulder's Tenet is its supposed link to evolution by natural selection, since only in statistically rare cases will the members of the second group find partners of their own species and hence be able to multiply at all.

You think I'm being naughty. You probably find it unfair that I expect Faulder's discussion to follow the customary rules of English. Very well, let's consider what you and I both really suppose he's saying, to wit:

"A species fitted in form and behaviour to a given environment tends faithfully to pass these characteristics genetically and by other means to its offspring. Hence, members of such a species will be more likely to survive and reproduce than members of a species less well adapted."

This formulation was well known prior to Darwin, and is almost wholly tautological. In fact, the fundamental tenet of any viable theory of evolution involves (1) stable inheritance of characteristics which (2) very infrequently breaks down, leading to (3) genetic diversity in a breeding population, in turn leading sometimes to (4) phenotypic diversity, which, (5) in conditions of (6) resource pressure and/or (7) altered environmental constraints, yields differential survival and fecundity ratios in members of the species bearing variants of the same genes.

The final outcome of such "natural selection" can be the emergence (probably into a new niche) of a fresh stock, similar to the old but incapable of breeding with it. A second-order effect might pit one species against a similar one in the same niche - as occurred when eutherian mammals ousted their marsupial look-alikes in Australia, or one entire radiation of species competing with an entirely different bunch - uppity mammals versus the last of the dinosaurs, say, though it almost certainly did not happen that way; check your chum Stephen Jay Gould for the details.

In any event, Faulder's bold redefinition of the bases of evolution should win him a prize for reinventing the 19th century. His further amazing revelations - such as "Unfortunately the dinosaurs seem to have been sidetracked into producing the birds", a wonderfully absurd teleological vision for an avowed disciple of chance - make no less depressing reading.

I haven't seen Margaret Giordano's story "Big Freeze", which sounds suitably awful, but the plot events you summarize can, at a pinch, be explained within current molecular biology. The genes for hirsuteness have been moved by reverse transcription into, say, an epidemic flu virus. Whether or not they have any survival value for the flu virus is irrelevant since chromosomes are crammed with useless crap going along for the ride. Leaving the virus they attach to people's genomes, but do not attain expression until a suitable environmental catastrophe triggers them.

Or perhaps early humans were hairy as buggery and the drastic changes in the magnetic field which caused the departure of the glaciers (Yes, of course I'm making this up, but that's the thing about sf, it's f as well as s.) turned off the expression of the body hair genes. With the return of the ice, the trigger mechanism simultaneously reactivates our kids' fur coats. No worries matey. Of course, any such imaginative theory ought to have been in the story - or at least gestured at, as quite a number were in my story.

[Damien, I can't help but feel that, in redefining Richard's statement, you are setting up a straw man. Richard makes no reference to species. Indeed he wouldn't. The term species has very strict meanings in biology. (The plural on "meanings" is deliberate.) Richard talks about organisms with a common gene pool. His other group of organisms is not necessarily, as you define it to be, heterogeneous or of diverse species. Thus his group of organisms with a common gene pool could be black moths of a particular species, as opposed to white moths of the same species.

The accusation that survival of the fittest is tautological is covered quite nicely by "my chum" Stephen Jay Gould in his essay "Darwin's Untimely Burial" in EVER SINCE DARWIN. Gould points out that there are criteria for fitness independent of survival - that there are obvious designs to fit an organism to a particular environment, and that those designs can be predicted in advance. We can then say that fur and subcutaneous fat are useful adaptations to a cold climate, and so that any creature possessing either will have an advantage over one that doesn't, in that environment, and so that characteristic can, all other things being equal, be selected for by natural selection.

I don't understand your use of the term "fecundity ratio" in your tenet for a viable theory of evolution. I think that "differential survival" covers what you are saying quite nicely. Fecundity does not necessarily guarantee survival, and it can be selected against.

In saying that the final outcome of natural selection can be the emergence (probably into a new niche) of a fresh stock similar to the old but incapable of cross-breeding with it I think you are putting the cart before the horse. For different characteristics to be subjected to natural selection, one expects them to be placed in a niche that doesn't quite fit them. Evidence suggests that creatures in a stable environment don't change much, but, when put into a new environment, natural selection acts with a vengeance. Thus some shark species haven't changed much over the last few hundred million years. They exist in a relatively stable environment and they fit their environment. Mammals, on the other hand, have undergone rather spectacular changes following the demise of the dinosaurs.



Your claims for teleology in Richard's statement on the dinosaurs being sidetracked into becoming birds misses Richard's point, which was that feathered dinosaurs might have become intelligent had natural selection not operated on them in such a way that those dinosaurs remaining after the Cretaceous extinction developed into birds. The "unfortunately" and "side-tracked" refer to the interesting possibility of intelligent dinosaurs, not to some pre-determined striving towards intelligence.

While I agree that your two explanations for the emergence of a race of hairy people have merits, I still have yet to see any scientific evidence for the idea that there are dormant genes that affect an organism's phenotype waiting to be triggered by external influences. Certainly some cells have genes that can be changed by chemical signals - hormones or carcinogens - but for the story to work you'd have to presuppose that all humans had the same gene for hairiness, and that it was triggered at the same time in everyone. That would be like all the cigarette smokers in Melbourne developing lung cancer at the same time.

(In a recent phonecall, Damien mentioned a group of blind fish that, when brought into the light, do develop eyes which aren't present in their cave-dwelling form. Once I've managed to catch up on my reading about them, I'll comment. But he is right. If humans did develop specific adaptations to cold during the ice ages, then it could be that these adaptations could be triggered by a new ice age. What I want to find out is whether the fish transferred to the light develop eyes, or whether it takes several generations for the eyes to re-appear.)

A more acceptable scenario in Darwinian terms would be that, because there is variation in the human population, some people are hairier than others. Over several thousand years of cold weather, hairier people have an advantage over non hairy people in terms of survival and so, after that time, the human population is hairier. A more likely outcome though would be that people with more subcutaneous fat would survive. Subcutaneous fat seems to be the insulation that humans have developed to offset our lack of body hair. Our hairier cousins, the chimps, oranges and gorillas live in warm climates. In addition to that, there would be a tendency for larger people to survive, because larger people have a lower surface area to volume ratio, thus allowing them to retain body heat more easily.]

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24/1/86

Evolution is a probabilistic phenomenon and, as such, no genetic line can be said to be a dead end until the gene pool is wiped out completely. There is always the chance, however small, that circumstances will arise allowing a group to take advantage of its genetic variations to expand its niche in the ecosphere. Mammals, as an insignificant feature of the paleo-ecology can be found alongside the dinosaurs. It was only the Cretaceous extinction of the dinosaurs and their like that allowed the genetic variations which arose in the mammals to become discrete populations. So they went forth and diversified. But the birds did it first. In the period immediately after the age of the dinosaurs, the birds were more numerous and diverse than the mammals, which took a little while to catch up and to eventually overtake the descendents of the dinosaurs.

Richard said birds are too specialized in flight to develop intelligence. I think it would be better, though not easier, to say that the opportunities afforded their gene pool through combinations of environment and genetic variation have created organisms where genetic drift is unlikely to bring about intelligence. Similarly octopi and squid cannot be considered failures as potential intelligences - just unlikely candidates.

Of course, the larger the gene pool, the more often variations will occur. As a genetic line becomes less numerous, heading towards extinction, it also becomes less capable of adapting to changing environmental conditions.

If part of a gene pool varies, and survives, and the original line dies off, that original line might not be lost. The Auroch, or European wild cattle, died out some time in the middle of this millenium, but most domestic cattle are descended from it. Late in the last century a pure gene pool was re-created from a few varieties of these domestic cattle.

I realize that this wasn't a great diversification, and is within a species, but it was done with early genetic science, and genetic technology has come a long way lately.

Two principles which are used by evolutionists are:

- 1) If a characteristic is not used it will degrade and be lost;
- 2) Once lost, a characteristic cannot re-evolve.

The first seems likely from available examples, but no likely mechanism has been suggested, apart from efficiency. The second can only be shown in that no known organism has re-evolved a previously lost feature.

Recent genetics has discovered large sections of DNA in genes which are apparently not used or which are inactive. Cancers may be caused by some of these being re-activated and expressing their message on the carrier cells. It has been suggested that these inactive sections may contain archaic genes used by ancestral organisms.

As a human embryo develops, it grows gills and a tail, which are later absorbed. The embryo develops into a normal human being, in spite of these expressions of its ancestry. In order for these features to develop, the genes for them must be there, but, at some stage, they are repressed or inactivated, as other genes take control of the organism's development. Some, if not most of the ancestral genes, may be present in all organisms. As the more "advanced" or "highly evolved" a species is, the more DNA it has per cell, this seems possible.

If, as seems to be the case with cancer, many activators and mechanisms are available to re-activate inactive genetic material, then a species need not be considered a dead end, or so over specialized as to be irredeemably lost on a limb of the evolutionary tree. As long as the ancestral unspecialized genes survive they have a chance of expressing themselves, perhaps even all at once, during a blue moon.

[Tony also mentions that the address above is not permanent.

There are some points that he raises with which I'd take issue. Firstly, in his two principles, I'd rephrase his second to read "Once lost, a characteristic is unlikely to re-evolve." What tends to happen to a creature re-entering an environment that its ancestors left is that it evolves different, though sometimes superficially similar, strategies to deal with the situation. Thus whales didn't re-evolve gills, but they did develop a tail and streamlining.

A second quibble is over the use of the terms "advanced" and "highly evolved". I don't want to delve too deeply into those at the moment. I intend to concentrate my thoughts on that into an article for TIGGER 19. However, as Richard's article pointed out, evolution does not work from



lower to higher, and judgements of what is more highly evolved than what involve value judgements rather than objective facts - whatever they are. To me, anything surviving well in its environment is highly evolved, be that an anaerobic bacterium or a human. If you want to judge on the basis of quantity of DNA, is that absolute weight of DNA, or DNA to cell weight ratio? If the latter, then the viruses win hands down. If the former, then there is certainly nothing to differentiate us from chimps, which have the same amount of DNA per cell as we do. According to DeRobertis, in CELL AND MOLECULAR BIOLOGY (Seventh Edition 1980) the highest DNA content is found in the cells of the amphibian Amphiuma. That must have a hell of a lot of unused information.

My third quibble has to do with embryonic development. Certainly there appear to be gill slits in human embryos, but they aren't functional gills. They are called pharyngeal pouches. In mammals they serve as guides for developing blood vessels. They develop into gills in fish. For them to develop into gills in humans would require a lot more reorganization than merely the pharyngeal pouches turning into gills. You'd need extensive reorganization of the human metabolism. I rather doubt that a gilled creature could afford the oxygen necessary for a homeothermic way of life. (My thanks to Mark Loney for pointing me to The Neck of the Giraffe.)]

MARK LONEY      If you "expect the science in the science fiction [you]  
P.O. Box 545      read to be at least consistent with current knowledge" then  
South Perth      you are going to have to be more up-to-date on current  
W.A. 6151      knowledge than the rest of "Science Fiction and the Hopeful  
AUSTRALIA      Monster" indicates. But, first off, a few side-swipes at  
Richard Faulder's article.

20/1/86

I'm afraid I must take exception to Richard's article, starting with the very first sentence. In the century and a quarter since the publication of THE ORIGIN OF THE SPECIES, Darwinism has been criticized and, to my mind, refuted. This refutation has not come from fundamentalist creationists, as much as Richard may like to reduce the argument to Darwinism = Science ≠ Religion = Creationism; it has come from a large and wide-ranging group of scientists who have not been satisfied with the mismatch between Darwin and the available evidence.

Before going any further, I think it best to define some terms. Richard seems to have glossed over several important differences in current evolutionary thought in his article. I'd like to make things a bit clearer. Darwinism is a scientific theory that rests on two equally important propositions. The first is that there was an evolutionary process at work in the development of the species that existed in the world; in the past the species of the world had been different and they had evolved over geological time into those we are familiar with today. The second is the postulate of gradualism. This relies on uniformitarianism - which postulates that geological and climactic conditions over the life of the earth have remained fairly constant. Uniformitarianism sees currently observable processes, such as weathering and erosion, as sufficient explanations for the geological development of our planet. This was required by gradualism, which saw evolution working in finely graduated steps. Favourable mutations within a population would be reinforced by "natural selection" and, over a long period of time, the differences would accumulate and new species would emerge. The problem that Darwin left for the scientists who followed him was to discover the mechanism by which this could occur. It was the pioneering work of Gregor Mendel that led to the discovery of the gene and the laws of heredity. This provided the impetus for the neo-Darwinists, who extrapolated mathematical models of genetic drift in populations to satisfy the need for a mechanism by which evolution could proceed.

What is in dispute in the scientific community is not the first of Darwin's propositions but the second. Gradualism demands that there be transitional forms between species. Darwin predicted their discovery in the fossil beds of the world. Transitional forms have not been discovered. The only things that can be said to have been found are variations in established species. It cannot be said that dinosaurs turned into birds. What can be said is that dinosaurs and roughly anything else alive on the Earth's surface that weighed more than twenty five kilogrammes, were wiped out by a large meteor strike on this planet about sixty five million years ago. After this mass extinction of life forms, roughly ninety five percent of the species alive on the earth disappeared from the fossil record; birds and lots of other species arose to replace them.

Which brings us to the problem of uniformitarianism. Uniformitarianism allowed Darwin to postulate gradual change through competitive population pressure in a basically stable environment. But the sudden extinction of the dinosaurs was brought about by a catastrophe - an ice age precipitated by the enormous amount of dust thrown up into the atmosphere from an iridium rich meteor - and there is a history of stability punctuated by catastrophe. The Journal of Physics published a paper by mathematician Peter Warlow in 1978 that demonstrated that the Earth could be turned upside down in its orbit by a passing asteroid of sufficient mass. This is because the Earth is not a perfect sphere, but rather an oblate spheroid - a shape which is unstable when spinning. This allows for an explanation of how the Earth's magnetic field seems to have reversed its polarity throughout the past, as recorded in deepsea sediments. Rather than the Earth's magnetic field altering - a process that modern physics cannot even attempt to explain - the earth has been reversing its physical orientation within it. And each of these reverses would have been accompanied by massive floods and extinctions, a consequence borne out by the fossil record which generally shows massive extinctions at the time of apparent magnetic field reversals.

This is where we start to come back to your article "Science Fiction and the Hopeful Monster". If the scenario above of periods of relative stability interspersed with destructive cataclysm is accepted, and there's not much choice, given the knowledge we have now of the world's geological past, the gradualism of the Darwinists and neo-Darwinists has to go out the window. It is being replaced with a revised Lamarckian thesis about the processes of evolution. Lamarck was an eighteenth century Frenchman whose work pre-dated Darwin by half a century. His ideas about inheritance of acquired characteristics were ignored by his contemporaries, despised by Darwinists and brought into complete disrespect by the Russian scientist Lysenko. (Who, after all, could ever forget the Midwife Toad?) But it was demonstrated in 1978 that mice, at least, could pass on to their offspring, in accordance with Mendelian rules, an acquired characteristic - tolerance to foreign tissue antigens. So, all of a sudden, there is a whole new ball game in evolution park.

Putting all the above together, we have an evolutionary process that shows long periods of great stability with evolutionary change occurring in times of great environmental stress and reduced population pressure. The meteor that wiped out ninety six percent of the Earth's forms of life - including the dinosaurs - brought immense environmental stress and a reduction in competition through population pressure. Goldschmidt's Hopeful Monsters would have been born en masse - assuming a similar response to a drastically changed environment by individuals from the same species - and, if the right genetic changes had been activated, then the species would survive into the next period of geological and evolutionary stability. So it is a quite reasonable supposition for an sf story about evolution to



"make all the children hairy". The Darwinian picture has far too many gaps in it to demand that speculative writers use it as their mould.

You were right, Damien has his evolutionary scientists hopelessly confused. But a conclusion that can be supported about the evolutionary process is that cataclysmic environmental changes are responded to by the genetic structure. From there I think it is once again a reasonable supposition for an sf story about evolution to postulate that a post-holocaust world would be populated by new species that are adapted to it. Personally I wouldn't think there was much chance of that happening. However flexible the genetic structure may be shown to be, I can't see it being able to cope with an environment poisoned by radioactivity.

Before I draw my evolutionary diatribe to a halt, I'd like to recommend two recent books on the subject - THE MONKEY PUZZLE by John Gribbin and Jeremy Cherfas (London: Triad paladin, 1982) and THE NECK OF THE GIRAFFE or WHERE DARWIN WENT WRONG by Francis Hitching (London: Pan Books, 1982).

[Before I get into the main thrust of my argument, a couple of points of order. It wasn't the work of Mendel that led to the discovery of the gene and the laws of heredity. Mendel's work, though brilliant, was ignored until, in 1900, Hugo de Vries, Karl Correns and an Austrian scientist whose name I can't find each independently re-discovered not only the laws of inheritance, but the fact that Mendel had beaten them to it by forty years. Had Mendel's work been recognised in his lifetime, Darwin himself could have synthesised the two and neo-Darwinism might have arrived earlier.

The Midwife toad is generally associated with Austrian scientist Paul Kammerer and his apologist Arthur Koestler rather than with Lysenko.

Certainly some Darwinists might have despised Lamarck. Darwin didn't though. In the absence of a decent theory of genetics, he came to consider the inheritance of acquired characteristics as a mechanism for inheritance, but he still saw natural selection rather than will as the way that the unfit were weeded out.

My major disagreement is with your assertion that gradualism is a necessary component of neo-Darwinism. Neo-Darwinism is a scientific theory, and, as such, is subject to modification. The picture of periods of stability and catastrophe prompted Eldredge and Gould to suggest the idea of punctuated equilibrium, i.e. that evolution could, at suitable times, proceed very rapidly, in geological terms. [Note my comments in the bottom paragraph on page 15 of TIGGER 17.] Thus modified, neo-Darwinism can cope with occasional catastrophes. The catastrophic disappearance of the dinosaurs left an incredible number of niches for the mammals and birds to fill. Organisms are opportunists. Thus separated into niches, natural selection could ensure that the variations best suited to particular niches would be selected for, in those particular niches. Gradual change could then polish off the rough edges.

As for your statement that no transitional forms exist, well I'd like to see more evidence for that. Do you refer to transitional forms between major groups, or to transitional forms between species. For the former you have peripatus - a creature with features of the annelid worms and features more common in the arthropods. For the latter, all you have to do is follow a cline of eucalypts, where, at one end of the range you will find one clear species of eucalypts, at the other end you'll find another species, and in the middle you'll find transitional forms.

I'll certainly keep an eye out for mention of the mouse evidence for the inheritance of acquired characteristics. It would be interesting, if borne out by further research. I'm keeping an eye out for the books you mention. Hopefully they'll mention the experiments. ( I've encountered little mention of this in my reading and I suspect that the results are of minor consequence. They certainly didn't get a mention in the courses I did in 1984 and I haven't noted anything in Scientific American recently.)

Jeremy Cherfas has an article on extinctions in the October 3rd 1985 New Scientist. There, though he seems to favour the idea of periodic mass extinctions, he admits that the data is a little fuzzy. An uncertainty factor of a half a million years makes it impossible to state with any certainty that the dinosaurs died out at the same time as the marine invertebrates. Certainly it is likely, given the proximity of the two extinctions that they were caused by the same factor, but likely and definite aren't the same thing, and neither justify invoking the shade of Lamarck. The idea that anything over twenty five kilograms was wiped out is not at odds with Darwin. It simply means that, at a particular time, the environment selected against big things.

Once you've removed the insistence on gradualism, natural selection and Mendelian genetics can explain the patterns of extinction and radiation following catastrophic events, be they the break-up of Pangaea - blamed for the great Permian extinction - or the asteroid that seems likely to have triggered the Cretaceous extinction.]

CHRISTINE ASHBY It is an interesting feature of sf stories about mutants  
P.O. Box 197 that the mutations are almost without exception beneficial,  
Albert Park both to the affected individual and from the evolutionary  
Vict 3206 point of view. Sure, the mutants may be hideous to look  
upon, but they have these amazing psi powers which ensure  
3/1/36 that they will come out on top by the end of the story.  
This sort of thing is particularly appealing to spotty  
adolescent science fiction fans.

In real life though, most mutations seem to be positively harmful. Offhand I can think of haemophilia, albinism, achondroplasia, Huntington's chorea, thalassaemia and Down's Syndrome ( I restrict myself to the human race, since I know even less about animals and plants). Perhaps we are so able to modify our environment that mutations which would enhance survival in a less technological society are without evolutionary significance. You might heal faster or have more acute vision or wonderful teeth but in all likelihood you're only going to have two children anyway, and in the meantime your natural endowments will probably go unnoticed by everyone except your mother and your G.P..

Funny that you should mention "Only a Mother". That story epitomises the approach of sf writers to mutations. I've never forgotten that story because I was so appalled by its utter dishonesty. If the child hadn't had such extraordinary mental abilities - the beneficial mutation - it wouldn't have been sf at all; it would presumably have been a straight story about a mother coping, or rather failing to cope, with a deformed baby. I don't think that Merrill would have been able to write that story - there was no sign of it lurking beneath the surface and trying to get out from under all that saccharine sweetness. Merrill excuses the mother's blind devotion, it seems to me, because of the child's precociousness - the woman is not unhinged, she's just an extreme case of the Devoted Mother, behaving quite normally in the circumstances. I know two people born without limbs, and they were both abandoned at birth by their mothers; of course, they both have only normal intellectual abilities.



Lee Harding has too suffered from writers' block. He turned up at one of those conventions at Mannix College years ago - he was living at Sherbrooke at the time - and when, as usual, I wouldn't let him in for free, he was dreadfully upset because that was the last straw on top of the misery he was suffering from with his writing. This was before he publicly gave up writing sf. I have a long memory.

[For others with a long memory, Christine won the 1976 DUFF race, and went to Midamericon. Her report on her DUFF trip - THE FLIGHT OF THE KANGAROO - is now available (I have copies \$5-00 each) and a handsome report it is too, with a Chris Johnston cover, and offset, single sided. I found it delightful reading, albeit too short. Perhaps Christine might consider doing a version including the libelous stories that she left out of this official trip report.

Some fascinating names appear here. I note one Lynne Dollis, who is currently a member of STIPPLE-APA - the other Minneapolis Amateur Press Association. Members of the Real Official Carey Handfield Fan Club can also learn about the medal Carey won in a Minnesota Icecream shop, and of the time that Carey couldn't eat all his breakfast. Christine doesn't write anywhere near enough for fanzines, but this piece is proof that she should be tied to a typewriter at least once a week.

But getting back to Christine's letter, although there are numerous documented cases of beneficial mutations in plants and animals - penicillin resistance in bacteria being one that comes to mind immediately- there are few in humans. One with mixed benefits is sickle cell anaemia, which is fatal if one has both genes for the condition, but which endows resistance to malaria to individuals who have one sickle cell gene and one for normal red blood cells.

With regard to personal mutations, I have one that would have been most deleterious to my survival during any of the great Witch Hunts - a third nipple. I guess that that is one of those neutral mutations. It is certainly of no use. I gather that the third nipple isn't functional even in females. But it's there. It's part of the variation of the species. Perhaps it would be of importance if women, for some reason, developed a nipple fetish.]

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U.K.

18/1/86

What I think you should have done with your piece on how to run a masquerade was tear it up, throw it away, and wait six months before even thinking about redrafting it. That way it wouldn't have been so long and unnecessarily detailed - or taken up so much of TIGGER 16, to the inevitable detriment of the issue as a whole. Which I have to say that as a result I found fairly boring. And I still think your taste in reading is abominable.

#### IAHF

G. Martin 71 Alexander Ave, Upwey, Vict 3158, who writes the sort of fulsome praises that any faned appreciates, but which we're far too modest to print.  
Melanie Sandford-Morgan Who nominates Ronald Reagan as proof positive that evolution does not work to improve the species.

Lucy M. Huntzinger who mentions that she has been evicted, and that, to avoid all those unsightly forwarding stickers, she has changed her postal address to a mail box, Lucy Huntzinger, 2215-R Market St, San Francisco, CA 94114, U.S.A. Mail for Sharee Carton can also be addressed to her care of Lucy at the above address.

Cathy Kerrigan who sends the Nova Mob Schedule for 1986.

Bob Laurent who mentions that it looks as though there will be a brief AUSSIECON TWO film tape, but that he's awaiting a release form from Ann Poore. Extract the digit Ann. More details as they become available.

Allan Beatty who is sure that TIGGER 16 was Q36W.

Gerri Balter with her excuses for missing AUSSIECON TWO

Rob Gregg who prefers Tiggers to Q36s.

Julie Ackermann who describes the joys of helping on an Art Show that she didn't expect to work on.

Garth Spencer who is pissed off by the fact that Confederation didn't notify the Worldcon '89 at Hyles House bidding committee of the closing deadline for bids for the 1989 worldcon. Garth also sends a flier for the bid, which seems to have something to do with performing taxidermy on goats, or animal husbandry or something. For the flier, write to MYLES BOS, 4196 Glenkinsop Rd, Victoria, B.C., V8X 2C4, CANADA.

Garth himself is interested on hints concerning convention running, and would appreciate any comments. His address is 1296 Richardson St, Victoria, B.C. V8V 3E1, CANADA. He also puts out a Canadian newszine THE MAPLE LEAF RAG and his own genzine THE WORLD ACCORDING TO GARTH.

---oOo---

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