

# darwinia...

THE WORLD'S FIRST VIRTUAL THEME PARK



Visit Darwinia...  
A land of contrast  
Purchase your  
ticket now -  
Only £29.99

ADVERTISEMENT FEATURE

# Innovation, Imagination & Intellect

**Built: £99.95**

Including VHS post and packing, free course in computing.

**Kit: £79.95**

Including VHS post and packing, free course.

Dr Sepulveda  
designer of the  
protologic

#### computers

Programmed in BASIC—the world's most popular language—the Z80 is suitable for beginners and experts alike. And requests from enthusiasts have been tremendous—over 20000 Z80s have been sold so far!

#### Powerful ROM and BASIC interpreter

The 4K BASIC ROM offers remarkable programming advantages:

- Unique letter-based key word entry: the Z80 contains a great deal of treasure trove typing. Key words: RUN, PRINT, LIST, etc. Have that one single key entry!
- Unique syntax check: A cursor identifies errors fast.
- Exception string handling: one key sets up to 32 string variables—length. All strings call string.



The Z80 is a better way to get the most out of your computer. It's the most powerful personal computer available today.

- BASIC language with arithmetic, exponent operations.
- Randomize function, useful for games and search codes, as well as more serious applications.
- Tower wheel program control.
- FLEX and POKÉ enable entry of machine code instructions.
- High resolution graphics.
- Lines of unlimited length.

#### Unique RAM

The Z80's 16 KBYTE RAM is the equivalent of up to 64 KBYTES in a conventional computer—typically storing 100 times of BASIC.

No other personal computer offers the unique combination of high-capacity and low price.

For more information, contact Protologic Entertainment.

There is all contained in a 500 page book (free with kit) that makes starting easy, starting simple, and progressing a complete course in BASIC programming. Here the principles to complex programs.

#### Kit or built—it's up to you.

In all forms, the Z80 is a powerful and easy to use, using a few special settings. And you may directly have it surface many features—BASIC ROM, BASIC interpreter, etc. If not, take the caution.



Both kit and built versions come complete with all necessary leads to connect to your

protologic  
entertainment.

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Darwinia is a Virtual Themepark, built by Dr Sepulveda out of malfunctioning Protologic 68000s.



Darwinia is populated by a sentient evolving life form called the Darwinians.

Unfortunately, the systems of Darwinia have been overrun by an evil red Viral Infection.

Your task is to destroy the Viral Infection and save the Darwinians.



## camera

Use the W,S,A,D keys to move the camera.

You can move the camera up and down by scrolling your mouse wheel, or by pressing Q and E.

You can zoom by pressing the middle mouse button, or by pressing Z.

To speed up the camera, hold SHIFT.

## squads

Your primary weapon against the Virus is the Squad.



To create a Squad, hold TAB to access the Task Manager and then click on the Squad Icon.



Release the TAB key and click in one of the highlighted areas to place your Squad in the world.

Squads are controlled by Left Clicking to move, and Right Clicking to fire lasers.

OVERVIEW



## engineer



To create an Engineer, hold TAB to access the Task Manager, then click on the Engineer Icon.

Engineers can capture research, reprogram buildings and collect souls.



## research

From time to time you will find Research Items scattered around Darwinia. These may be captured by Engineers to provide new weapons and upgrades.



## buildings

Most buildings in Darwinia are controlled by a nearby Control Tower.

You can use Engineers to reprogram Control Towers, enabling you to use the building that the Control Tower is connected to.

## souls

Whenever a creature dies in Darwinia, be it a Darwinian or an evil Virus, it will leave a Soul behind. Use Engineers to gather these Souls and take them to the nearest Incubator, where they will be reborn into Darwinians.

## task manager

You can swap between running programs (e.g. Squads and Engineers) by holding TAB to access the Task Manager, and then clicking on the Icon representing the Task at the left of the screen. Alternatively you can use the number keys.

You can terminate a program by pressing C or by clicking on the Terminate button to the left of the task Icon. For a list of research options, hold TAB then scroll up. For objectives hold TAB and scroll down.





# DARWINIAN



These cute little fellows are the native life forms of the world, and the subject of a decades worth of research into digital life. What they lack in strength and speed is made up for in courage and spirit. It is Dr Sepulveda's dream to evolve the Darwinians into an intelligent species capable of sustaining themselves in a digital world.

# SQUAD



**LMB** Move  
**RMB** Fire Lasers

**RMB and tap LMB** Fire Secondary Weapon

Dr Sepulveda long feared that his work with Darwinia would be overlooked, simply due to a lack of exciting action for visitors. To solve this problem he designed a series of videogame style mini games, mostly involving guns and blowing things up. The Squad, made up of several Squaddies, came out of this design.

grenades      rockets      airstrike



The Squaddies' default Secondary Weapon is the Grenade. You can draw these gestures to change the current Squaddie weapon. Not all of these weapons are immediately available. Each Squaddie can only throw a single Secondary Weapon at any one time, and must wait for it to detonate before he can throw another.

# ENGINEER



**LMB** Move

Originally designed as simple diagnostic tools to aid Dr Sepulveda in the construction of Darwinia, the Engineer was gradually developed over time until he was capable of performing numerous helpful tasks. Engineers will reprogram nearby buildings that have become damaged. They will also collect up the Souls of creatures that have died.



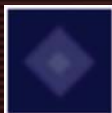
# OFFICER



- LMB** Move
- RMB** Set GOTO order
- RMB near the officer** Toggle orders

The Officer is used to directly control the nearby Darwinians. An Officer is created by promoting an existing Darwinian. To promote a Darwinian, run the Officer program then Left Click on the Darwinian. Once promoted, an Officer can issue orders to the nearby Darwinians by waving specially designed signal flags.

none



goto



follow



absorb



Not all of these orders are immediately available - they must be researched.

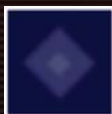
# ARMOUR



- LMB** Move
- RMB near the Armour** Toggle loading/unloading
- RMB on the landscape** Convert to Battle Cannon

Once the Construction Yard is online you will be able to construct Armour. Originally intended as another of Dr Sepulveda's mini games, Armour can be used to transport large numbers of Darwinians around the world. It can also be converted into a stationary Battle Cannon, for moments when extreme violence is required.

none



load



unload



deploy



In his first interview for almost 20 years, the once infamous Dr Sepulveda talks exclusively to T-Magazine.

# On the e-Sofa

**⚡** *All life begins with an accident. Some curious interaction occurs between lifeless chemicals, in the right conditions and under the right temperatures, and suddenly you have life. Darwinia is no different - it just happened in the digital domain, rather than the biological.* ⚡

It seems it is barely possible to open a paper, switch on the radio, channel hop on the TV without hearing the name Dr Sepulveda.

Yes, Dr Sepulveda has returned. And what a return it is. After languishing in the depths of computer obscurity for nearly 20 years, he has pulled himself back from his disastrous Protologic fiasco, and remodelled himself as nothing less than a Digital Deity. And Darwinia is his creation. A virtual theme park populated by thousands of sprite-like creatures, the Darwinians, Darwinia is undoubtedly the leap that will take the meaning of computing to a new level. Not just computing; Darwinia is causing us to ask ourselves all over again those fundamental questions about life itself.

Not the kind of thing you'd expect from a self-proclaimed "computer geek" who spectacularly failed to sell every single one of his 50,000 stock of Protologic computers back in '86, when otherwise the world of computing could do no wrong.



Dr Sepulveda talks with pride about his Creation

## A brief history of Sepulveda

Pronounced Sep-ul-vader - a bit like a distant relative of Darth, maybe, the first we heard of our most recent god was way back in the early 80s with his first Protologic computers. Hailed (by Sepulveda himself) as "the console to rule all consoles", the launch of the Protologic 68000 in '86 however was far from plain sailing. Undoubtedly innovative, the 68000 was doomed to a dark future. Minor technical problems in the lead-up to the launch escalated beyond all control, leading to a media frenzy and the eventual collapse of Protologic Entertainment in the most "glorious public failure" of the decade.

Left with nothing but warehouses full of unsold machines, Sepulveda became a recluse - or even more of a recluse; he has always shied from public attention. But it seems he has just been biding his time, waiting for the right moment to unveil the true genius of the 68000s.

With nothing left to lose, the scientist in Sepulveda was awoken and he began to experiment. First linking tens, then hundreds, then thousands of Protologics he began to realise that something very special was happening. In Sepulveda's own words, "an unintended design quirk [...] causes adjacent systems to resonate on a quantum level". This phenomenon, which he terms "Hyperprocessing", is a cumulative effect, with processing power increasing



# Dr Sepulveda

Managing Director, Darwin Research Associates

dramatically as units are added, each making use of quantum interference to share data with their neighbours.

Realising he was standing on the brink of a digital revolution, Sepulveda founded Darwin Research Associates with what little money he could scrape together. He set to work creating a massive grid of computing power that was "more akin to a human brain than any form of supercomputer".

Equipped with his newly forged tools, Sepulveda crafted himself an intricate fractally generated world, aptly named Darwinia. And with that, the first tender shoots of digital life began to appear. The dark age of the Protologic was over. Let there be light!

## Darwinia

It seems, in his fall, Sepulveda was given quite a reality check - or at least an ego check. Once described by an unnamed friend as "unbearably arrogant", Sepulveda, in creating his new world, realised that the key to Darwinia could not be designed purely from his own knowledge or experience. The missing ingredient to stir into the digital primeval soup was a system of evolution, that would eventually equip Darwinia's fledgling inhabitants, the Darwinians, with the intelligence to flourish by their own means.

Each assigned a strand of digital DNA or a "Spirit", the Darwinians are imprinted with individual characteristics, as well as the ability to learn through their successes and failures in their virtual world. Upon their death, the Spirit is released and returns to a central repository -

affectionately called "Heaven" by Sepulveda - situated beautifully at the centre of the Darwinian world. Here, the Spirits are ordered, parsed, and re-imprinted on a new creature for the life cycle to begin again.

This endless cycle of spirit-enrichment has been the cornerstone to evolution within Darwinia, which has now been running for over a decade - representing thousands of generations of Darwinians, "each more intelligent and aware than the last".

*"I believe the Darwinians to be as alive as you or I"*

It's not hard to see why Darwinia has caused such great waves. Not only has Sepulveda unwittingly "discovered" quantum computing, the holy grail of computer scientists world-wide, but his work has ramifications across the spectrum of scientific disciplines: from physics to biology; palaeontology to sociology. Not to mention the simply overwhelming reaction among theologians and ethicists.

Unsurprisingly, creating a new life-form, digital or not, is not without controversy. Thousands of people are expected at the official public "opening" of the Darwinian theme park later this year, and not all of them well-wishers. Security is going to have to be very tight.

Already there has been harsh criticism from various religious groups, and even some faint mumbblings from animal rights activists. They fear the poor Darwinians are being exploited by their "god", caged up in a virtual zoo for all to come and ogle at, unprotected by real world laws.

And of course there are many who are sceptical that what we

are seeing in Darwinia is even life at all; that Darwinia is merely an elaborate publicity stunt dreamt up by a struggling eccentric in need of an ego-boost. Sepulveda himself has no such doubts, and seems almost unaware of his many critics:

"By any definition that I have read, the Darwinians are most definitely alive. More than that, I believe them to be as alive as you or I or anyone else on this planet. They are born, they live, they communicate, they reproduce, they die. They learn."

He has spent the last decade watching the Darwinian way of life evolve, watching them pass on stories, watching them develop religious beliefs and customs. It is clear that he sees himself as a

benevolent but distant father-figure to them. Sepulveda proudly claims that the Darwinians have a "fundamental respect for each other that is far more caring than anything I have witnessed on this Earth".

## A New Era

Love him or hate him, genius or madman, one thing that we all have to agree on is that Sepulveda, with his work in Darwinia, has brought us with a jolt headlong into a new era. An era that is both exciting in the new technologies that it brings, but also sobering and even frightening with the new responsibilities placed upon us. And we all have a responsibility in this; benevolent eccentric or not, Sepulveda has opened his door to a new world, reaching far beyond the realms of the mere computer geek, and will undoubtedly impact all of our futures in many new and unpredictable ways.

words by P.Perkins



## VIRII

A destructive corruption of the native Darwinians, these evil creatures will attack anything that comes within range. They're fairly weak and don't do much damage on their own, but they can be found to have replicated in very large numbers, posing a much greater threat. Virii can replicate rapidly by fertilising Eggs (laid by Spiders and Spore Generators) with the Souls of dead Creatures.

## CENTIPEDE

An early mutation of the basic Virii pattern caused them to expand into three dimensions. These Centipedes are stronger than the Virii they mutated from, but are also more concerned with their own survival. They will flee from an attacker if they take damage. Unfortunately as each part of their body is destroyed, they will simply break up into smaller and smaller components until fully wiped out. Centipedes are capable of consuming any Souls they find lying around and regrowing parts of their body.

## SOUL DESTROYER

Additional mutations within the Virus structure granted some of the larger Centipedes the ability to fly, and these fearsome creatures now haunt some of the worst infected areas of Darwinia. They earned their name when it was discovered the Souls they consume are actually obliterated - something which Dr Sepulveda believed was simply impossible.

## TRIFFID

These plant like creatures will launch Eggs every few minutes, which burst open to form new Virii and evil creatures. They are normally dormant but will activate when they sense enemies in their presence. Their main weakness is that they are stationary and defenceless at close range.

## BUG

The Darwinians used to hunt these cattle-like creatures during the early years of Darwinia. The Bugs would just fumble around the landscapes, occasionally breaking the subsystems that made up the world or corrupting the textures they came into contact with. Until recently it was believed that the Bugs had all been eradicated from Darwinia.

## SPIDER

The Viral outbreak was able to find and mutate the last of the Bugs that existed within Darwinia, and the Spiders are the result. They are blessed with extremely strong rear legs and are capable of leaping great distances. They prefer to pounce on prey from a distance, and appear to be invulnerable to standard Laser blasts. They can also lay Eggs, which will hatch into many more Virii if they are fertilised with a Soul.

## SPORE GENERATOR

During mutation, some of the Bugs gained the ability to lay vastly greater numbers of Eggs than the Spiders. These bloated and cumbersome creatures were gifted with the ability to hover above the ground out of danger. They are able to seed entire areas with dormant eggs that will hatch into hundreds of Virii if fertilised by the Souls of dead creatures. Thankfully the Eggs they lay cannot survive large falls, so the Spore Generator must descend to within weapons range in order to seed the ground.

## ARMY ANT

Many of the smaller Bugs that existed were corrupted into these creepy nuisances. Individually the Ants are dumb and weak, but when placed together with hundreds of their kin they can be a serious threat due to their Hive intelligence. The Ants will attack anything in range of their Nest, and will carry Souls back for replication into more Ants.

### AN INVESTIGATION INTO THE RITUALS AND HUNTING HABITS OF THE NATIVE DARWINIANS

by *Dr. Sepulveda*

#### ABSTRACT

This paper discusses the emergent hunting behaviour of the inhabitants of the virtual-world, Darwinia, and the tendency towards creating a self-repairing system.



BUGS



## CONTROL TOWER



Almost all buildings in Darwinia can be reprogrammed using nearby Control Towers. Many of the buildings have been corrupted by the Virus and need reprogramming before they can be used. To do this you must create Engineers nearby and they will do the job. Control Towers will flash red if they are infected with the Virus, and Yellow if they have been successfully reprogrammed.

## RADAR DISH

These buildings are used for short range transportation between islands. Most of them are initially offline due to the Virus outbreak, so their Control Tower must be reprogrammed before they can be used. Once this is done you can align a Radar Dish by clicking on it to select it, then clicking on a receiving dish. The dishes will align, forming a communication tunnel down which you can transport Squads, Officers, or Darwinians.



## INCUBATOR



When a creature dies in Darwinia, its soul will linger around for a few minutes before floating away to the Soul Repository at the centre of the World. However, this process can be interrupted and the Soul can be immediately reconstructed into a Darwinian if it is collected in time. Engineers will pick up the Souls of dead creatures and carry them to Incubators, which will slowly reprocess them into Darwinians.

## TRUNK PORT

All locations in Darwinia are connected by Trunk Ports. Once enabled they form a two way link, allowing access both ways. Most of the Trunk Ports have been disabled by the Virus outbreak, and must be re-enabled by the reprogramming of their Control Towers.



# THE PHILOSOPHICAL IMPLICATIONS OF THE CREATION OF A PURELY DIGITAL UNIVERSE

By Tokugawa Iesuwa

Written originally for The Weekly Philosopher

Recently, it has come to the attention of the general populace that the previously affluent but now destitute Dr. Sepulveda has created what can be regarded as a purely artificial, yet completely self-sustaining and learning digital universe. While the computer science regarding this creation is apt for debate, the philosophical implications of this new most amazing advance are equally susceptible for multiple levels of impassioned analytical analyses.

The first question that we have to consider is whether or not the creatures present in this world, quite appropriately named "Darwinia", are alive in any sort of meaningful sense. Previously in history, life has been defined as the presence of cognisance, or the availability of a level of biological and chemical activity. This new creation has thrown all this into question. Does a Darwinian, one of those fastidious little sprite creatures, have what can be referred to or acknowledged as life?

In my opinion, one has to keep in mind the classic mantra of Descartes, "I think therefore I am." Darwinians certainly do think, as evident through their increased level of development through time. Sources assure me that Darwinians do learn, and learning is a mantle of cognisant mental processes. But does the ability to think make these digital creations alive? It seems that this question is yet to be answered.

The question of life has several implications in our analogue world. Primarily, there are many questions as to the legal implications of Darwinians. Do Darwinians have legal rights in any sort of technical sense, the right to citizenry, even rights to receive welfare? Are Darwinians technically employed? When they reproduce, what procedures lead up to and follow this? Do Darwinians get married? As a philosopher, I have to admit that these questions do "boggle the mind." The subject of

Darwinia is simply too large to address in a single article.

Allow me to be concise on this subject. The only thing completely certain about Darwinia is that the creatures therein have the ability to think, *ipso facto* have the ability to make decisions, and therefore are at an equivalent level to human beings. Ironically enough, this revelation does not assist in simplifying this analysis in any way whatsoever. Instead, this only adds to the layers of this philosophical conundrum.

For example, it may be possible in the near future to access Darwinia and participate in events therein. The ethics of this are disputable. If one believes that Darwinians are truly alive, then to disrupt in their affairs is questionable. Kantian philosophy makes it explicitly clear that rational beings can not be exploited, and therefore to actively intervene in Darwinian affairs is equivalent to "preemptive war."

This being said, I have entered Darwinia, and have taken a quick look around. Despite all my ethical qualms, it proved to be fantastically interesting to see these little creatures in action. They are truly amazing, building, creating, and surviving. Recently, a virus has managed to infiltrate the Darwinia system, and now we must assist the Darwinians in their struggle against this most menacing of foes. I have to say, it is great fun. Quite quickly I was taken in by the action and strategy of this remarkable world.

While ethical and philosophical questions certainly remain as to the precise nature of this new world, I have no qualms in saying that I am happy to participate therein. I would advise, as a philosopher, that this is certainly open to examination. However, as a fan of the digital medium, I would recommend that anyone with an interest should purchase a ticket to this most interesting of worlds.

## primary support page

<http://www.darwinia.co.uk/support/>

## problems getting the game to run

- ✦ Make sure DirectX9 or later is installed. DirectX9 is included on the CD. Alternatively you can download it from <http://www.microsoft.com/directx/>
- ✦ Make sure you have the latest drivers for your graphics card:  
NVIDIA (GeForce range) <http://www.nvidia.com>  
ATI (Radeon range) <http://www.ati.com>
- ✦ Perform a Windows Update (from your Start Menu).  
If the game still will not run, try looking on our Support pages for similar problems and solutions.

## performance problems

- ✦ If the game is running too slowly, try reducing some of the graphics and audio quality. To do this, press ESC to bring up the main menu, then click **Options**.
- ✦ In **Sound Options**, try disabling Realtime Effects and Hardware3D. If that doesn't improve things enough, try reducing the number of channels and the mix frequency.
- ✦ If you have only 128Mb of memory, try reducing the Memory Usage of the sound system.
- ✦ In **Graphics Options**, try disabling the Pixel Effect as this can run very slowly on certain hardware. Reduce each of the graphics sliders to Low until you find a comfortable frame rate.
- ✦ In **Screen Options**, try reducing the Screen Resolution.
- ✦ Ensure there are no other tasks running in Windows that are not required.
- ✦ Ensure full-screen Anti-Aliasing is disabled. You will find the option for this in your Graphics Options panel (right click on the desktop, click Properties, then click Advanced).
- ✦ Installing the latest drivers for your graphics card can provide a big speed increase.

## problems with alt-tab

- ✦ If you are running Windows Power Tools, try disabling this as it can cause problems with the ALT-TAB in game.
- ✦ If you are running any other program that uses Alt-Tab in some special way, try disabling this.

**HEMP DAILY**  
BY CHARMONGER

WOW MAN, THERE HAS BEEN A NEW  
INVENTION MAN, THAT IS SO FABULOUS THAT IT LIKE  
TAKES THE PLACE OF HOW TO SMOKE MORE! BUT DUDE,  
IN THIS WORLD YOUR LIKE GREEN MAN! GREEN, THINK  
OF IT MAN! GREEN LIKE POT...LIKE DUDE!

BUT ANYWAY MAN, IN THE WORLD YOU LIKE  
DO THINGS, ITS AMAZING MAN. AND DUDE!  
I JUST REALIZED THAT WHEN YOU DIE MAN,  
YOU GO UP MAN. LIKE YOUR HIGH!

DUDE, I JUST REALIZED, I LIVE ON SEPULVEDA  
BOULEVARD MAN! WOW MAN, ITS LIKE, I'M LIVING IN  
DARWINIA. MAN, I'M SCARED MAN...I'M SCARED...  
WOW MAN, I JUST REALIZED SOMETHING ELSE...  
DARWINIA KINDOF RHYMES WITH BONG...WOW!

## created by

Chris Delay  
Andrew Bainbridge

## produced by

### **Introversion Software**

Mark Morris  
Tom Arundel  
Chris Delay  
John Knottenbelt

## sound design and production

Alistair Lindsay  
Michael Maidment

## music

Trash80 ([www.trash80.net](http://www.trash80.net))  
Mathieu Stempell (Dma-Sc)  
Paul Slocum

## additional shapes

Michelle Jones  
Kelvin Liew

## beta testers

Joshua 'Miah Helpmann' Clayton  
James 'vibroaxe' Kinsman  
Philip 'Darksun' Chillag  
Robb 'Rkiver' Dunphy  
Jack 'film11' Dudman  
Mark 'LLamaBoy' Vine  
David 'Stewsburntmonkey' Stewart  
Allan 'Starfyre' Cornwall  
Richard 'Hektik Sniper' Salmon  
Richard 'Superpig' Fine  
Richard 'false' La Charité III  
Darkshine  
Paul 'Deepsmeg' Evans  
Eric 'sysrq' Gillingham  
Leander 'elDiablo' Hambley  
Christopher 'Phydaux' Kent  
Dave 'Dave2' Wickham  
Derek 'Punisher Bass' Schott  
Dimitri 'cyph' Teresh

## starring

Peter Hutchison  
*as Dr Sepulveda*  
and Maddie the cat  
*as the voice of the Darwinians*

## additional graphic design

Jo Stansfield  
Mike Mystery

## mac and linux ports

John Knottenbelt

## additional background story

Jonathan Bender  
Jeremy Bender

## uk distribution

Pinnacle Software

## mac port published by

Ambrosia Software

Jason 'WolfLord' Crisman  
Gary 'Icepick' Chambers  
Andrew 'andcarne' Carne  
Stephan 'Iwudacus' Lintvelt  
Ryan 'Soulkeeper' Trevett  
Kevin 'Janus' Gadd  
Jared 'Lord Doskias' Nyman  
Adrian 'Slayer' Wood  
Mouse  
Monkeyfood  
Anael 'Kirreip' Verdier  
Nathan 'Bruce' Parslow  
Christian 'Dimpfinator' Dimpfl  
Duncan 'Cap'n Hector' Harris  
ToeBee  
Alec 'Hamster2' Ingulsrud  
Pieter 'GeniusDex' Bootsma  
mikemystery  
Kung-Fusion

CREEDITS

# REFERENCE

left a  
right d  
forwards w  
backwards s  
up e  
down q

zoom camera z  
fast camera shift  
skip message return  
chat log l  
help h

task manager tab  
select task <number keys>  
end task c  
deselect space



squad

engineer



grenade

officer



rocket

armour



airstrike

古古 古古古 古古古古 古