USER'S MANUAL

BY TOM BENTLEY

In war there is no substitute for victory.

-Douglas MacArthur

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UN NATURAL SELECTION

CONTENTS

INTRODUCTION 2

TUTORIAL 6

REFERENCE 30

The Basics 30
Types of Games 33
Brief Lab Overview 36
In the Habitat: New Experiments 37
The Synthetic Neural Injector: Grow Your Own 40
Body Types: A Medley of Monsters 42
A Lab with a View 46
The Census Module: Body Counts 49
The Database Module: Getting to First Base with all this Data 50
File and System Commands: Save the Theroids! 54
Variables 58
Going to Battle: It's a War Zone Out There! 66
On the Island: The Views of War 67
The Briefing: Get Your Briefs On 68
Aircraft 68
Aircraft Deployment: Nice of You to Drop By 72
Battle Encounters: Friends, Foes and Blows 74
A Hasty Retreat 75
The SatBeam: That Little Extra Something 76
The View Level: Look A Bit More Closely.. 78
Battle File and System Commands: Disk Driving 80
Challenges and Limitations of Top Secret Games 81
Strategies 85
The Ways of a Theroid 105

EXPERIMENTING WITH ARTIFICIAL LIFE..... 108

The Standard Laboratory Setup 110
The Experiments 111

INDEX 132

UN NATURAL SELECTION

INTRODUCTION

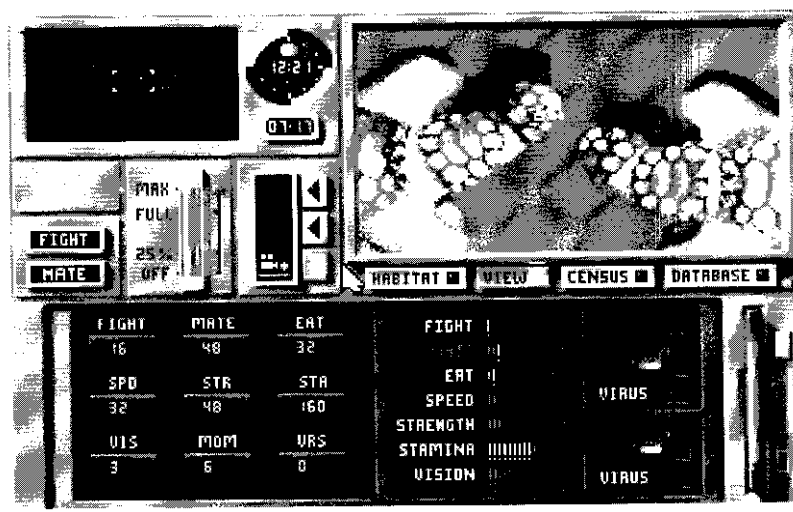
Learn, compare, collect the facts!

— Ivan Pavlov

INTRODUCTION

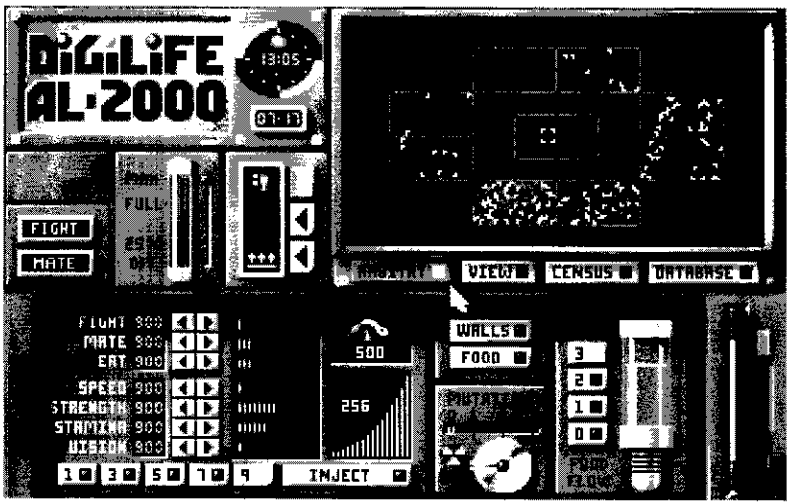
Welcome to the world of UnNatural Selection, where the fancies of the laboratory are wed to the furies of the battlefield. Your role is that of abrilliant (naturally) scientist battlingrampagingmutant Theroids (big, nasty monsters) with your own craftily bred combatants on a chain of islands.

Your insights, intuitions and inspirations--or lack thereof-in the creature-design business will be quickly put to the test. Successfully engineered creatures will thrive in your lab, fighting, mating and reproducing, and consequently thrive on the battlefield, fighting, mating and reproducing. Bad designing = bad battling.



The lab is equipped with the DigiLife AL-2000, a genetic engineer-&engine of magnificent sophistication, allowing you to fine-tune every characteristic of your creations. You build 'em, look at 'em, count 'em and sort 'em-the strong are keepers, the weak are throwaways. On the battlefield, your theories about creature breeding are put to the test. Your only weapons are your test-tube warriors: only the strongest (or sometimes the speediest, or the heartiest-maybe even the hungriest) survive.

Then again, if ruthless warfare isn't your cup of chromosomes, you can spend all of your time in the lab, testing and tinkering with your organisms. In the Maxis tradition of open-ended exploration. UnNatural Selection's simulation engine can be rewed up to as high an RPM as you like. The Theroids produced in your labs can be genetically adjusted, prodded and poked to explore and record all sorts of theories and experiments, a host of which we've provided for you on disk and in this manual.

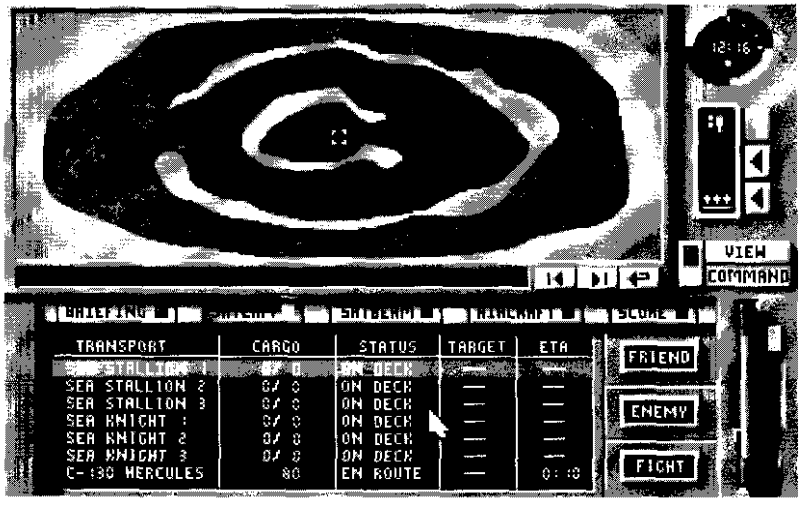


The dynamic interplay of the creatures demonstrates some of the complexities of living systems, wherebygeneticminglings, behavioral adaptation and environmental changes produce new creatures and fresh experimental elaborations. Of course, if you don't give a hoot about experimental elaborations, you can just build a bunch of bullies and go stomp the stuffing out of your enemies-we just want you to have fun doing it.

There's a tutorial here to get your lab up and running, and a reference section to cover the details, with astrategies chapter to give you a fighting chance. Co warm up the Bunsen burner and turn on those lab lights-it's time for a trip to the islands....

GETTING STARTED

See the included machinespecific addendum for complete instructions on installing and starting UnNatural Selection.



UN NATURAL SELECTION

TUTORIAL

War is much too serious to be entrusted to the military.

— Tallyrand

TUTORIAL

Welcome to the UnNatural Selection Tutorial, where all of you mad (or perhaps just slightly annoyed) scientists and military strategists will learn the basic procedures to genetically engineer a diverse crop of Theroids. You'll nurture their development and breeding-winnow out the weak and select the strong-and send them into combat for the good of us all. Tutorial instructions are in boldface and explanations are in roman type.

Take calculated risks. That is quite different from being rash.
— G. S. Patton (Old Blood and Guts)

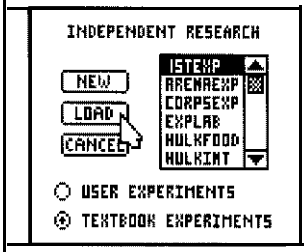
The Tutorial invites you to examine the game's broad fundamentals of creature design and combat deployment, but cautions **you** that there are many more subtle and complicated techniques for surer success on both counts, and that those are found in full elaboration in the Reference section. The Reference section contains complete information on all game commands and functions, and also a Strategies chapter. That's followed by a section with explanations for all of the lab's Textbook Experiments. Acomplete education all for the cost of a few page turnings!

Please refer to your addendum for installation and loading procedures forthegame. Once the game is loaded, you'll see thesweetly sentimental title screen, which can be whisked away at a click of your mouse. That brings you to the game's "desktop," where you can **take** turns in two directions: Top Secret games and Independent Research experiments. Top Secret games are accessed by clicking in the Top Secret box. Those games, a variation on those initiated from the lab, have their own fascinating account in the Reference section.

For our purposes, click on the Independent Research box.

A LAB OF ONE'S OWN

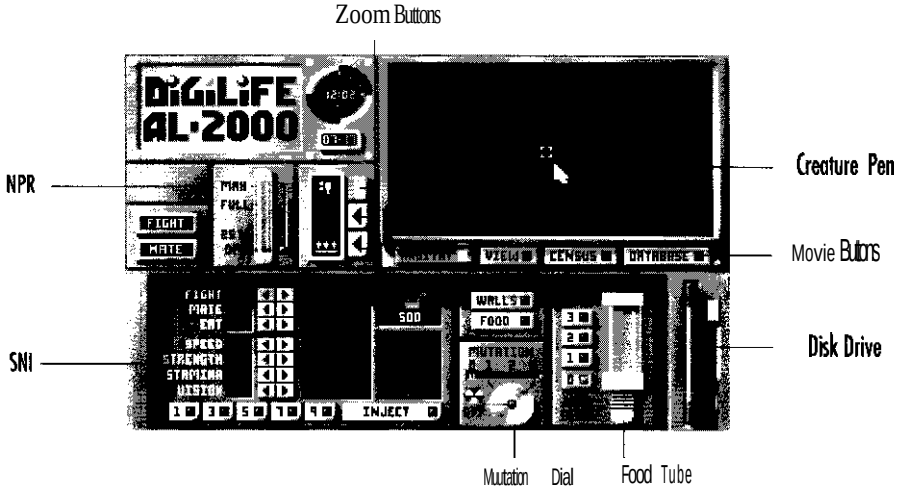
An Independent Research dialog box will appear, displaying a scrollable list of any saved experiments. If you click on the TEXTBOOK EXPERIMENTS radial button, you can scroll through some predesigned experiments by clicking on the scroll arrows, clicking in the scroll bar or clicking and dragging on the scroll box. However, we want a spanking-new experiment.



Click on USER EXPERIMENTS and then on NEW.

You are now in the laboratory, behind the wheel of the DigiLife AL-2000 computer, and it's a powerful vehicle. At the top-left of the screen is the lab clock, whichdisplays the hours, minutesand five-second intervals for your experiments, a useful counter for noting population and behavior changes over time in your creations. The month/day count is below that.

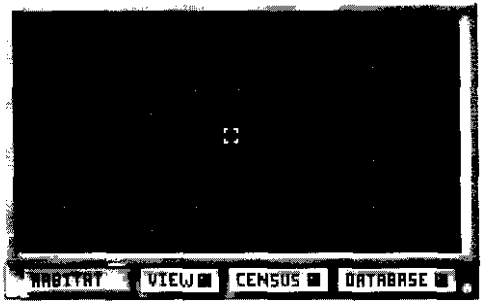
The large black box to the clock's right is the view screen for all of the lab's "creature pen," capable of three levels of magnification, which are controlled by the vertical row of three buttons to the screen's left. The screen is currently blank except for the empty selection bracket, but we'll soon fill it with squiggling savages.



Below the view screen are four buttons that access the DigiLife's different modules, with their variant observation and command functions for your creations. We are in the Habitat module, as noted by the highlighting of its button. Leave that as is for now, because we're going to do a little habitat construction. Our tools are the two buttons under the HABITAT button.

Click on the WALLS button.

The view screen now shows a grid of linear dots, which will become the "anchor points" for our wall building. When the mouse pointer is brought into the pen view screen, it will have a horizontal line, a wall, attached to it.



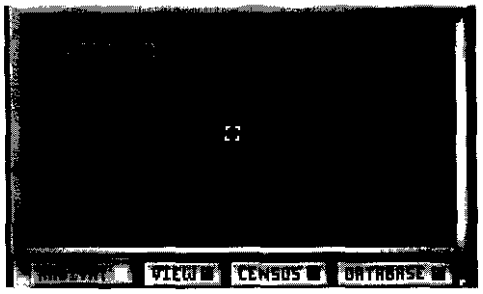
The Wall Grid

Bring the wall pointer to the top-left corner of the pen on the first anchor point and click. You've placed your first wall.

Click again to the right of that wall to place another.

You can remove walls drawn mistakenly by clicking on their respective horizontal or vertical line.

Now, hold down the Shift key with your cursor on the edge of your leftmost wall. (Note the wall cursor is now vertical.) Click and drag the cursor down to the fifth anchor point. Release the Shift key and place two more horizontal walls to the right.



Your First Pen

Click again on the Shift key and completely enclose your pen by drawing the second vertical wall.

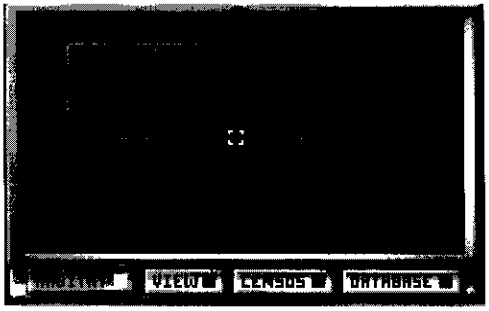
You should have an eightcell pen, four walls high, two wide. Congratulations! Even savage animals need a home, and you've just built one. Walls can also be placed at the second level of magnification, but we'll get to that.

Build two more pens that each share one wall with the pen adjacent, approximately the size and shape of those in the graphic.

It's not necessary to be exact, but just make sure they're closed internally and from each other.

Click the FOOD button.

The grid of linear dots is now green, indicating the placement points for the chow. To the right of the FOOD button is a tube labeled Food Flow, with a series of buttons to its left. The 0, 1, 2, and 3 represent the food flow levels, a measure of how much food (which is constantly replenished) is placed and then grown in the pens. The chosen level operates collectively for all pens.

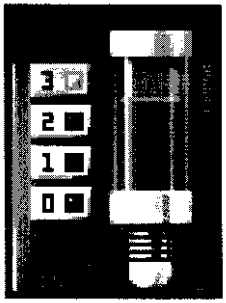


Three's Company

Click on 3, the highest food flow. The Food Tube will fill.

With your now-square cursor, click and drag through your pens to fill all of the pen's quadrants with food.

Anymisplacedfood can be erased byclickingonit again. You can perform interesting experiments with food reduction or tricky food placement in the future, as there is a host of behavioral dynamics associated with the Theroid's nutritional needs, but for now, let's give them full plates.



Food Tube

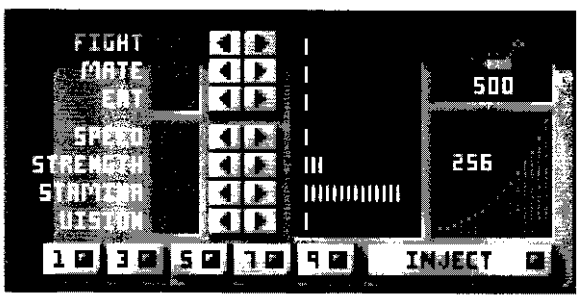
HERE A MONSTER, THERE A MONSTER

There is really no such creature as a sing/e individual; he has no more life of his own than a cast-off cell marooned from the surface of your skin.

-Lewis Thomas

It's time to be introduced to the Synthetic Neural Injector (SNI), the engine behind all of these Theroid tinkerings. The SNI console is at the bottom-left corner of the DigiLife, containing the controls for creature engineering. Using the right and left arrow buttons, you determine the values for two categories: instincts and characteristics. Fight, Mate and Fat are those instincts or urges that compel Theroid behavior. Speed, Strength, Stamina and Vision are the physical components of the animal's makeup.

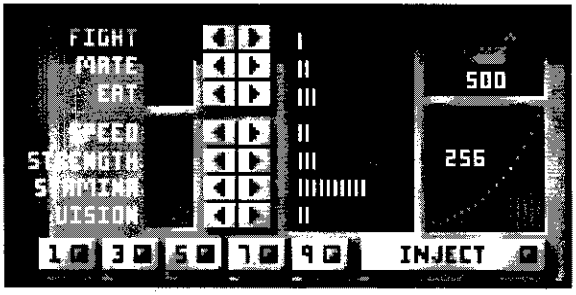
There are three fundamental creatures that can be constructed here: Zips, Hulks and Slugs. In short, Zips are fast, Hulks are strong and Slugs have stamina. Within those dimensions are manifold genetic combinations, but we'll just deal with the basics. Consult your Reference section for elaborations on Theroid design.



The series of bars to the right of each named attribute will highlight when fluid levels are increased and dim when levels are decreased. The creature that will result from the mixing of attributes will be pictured at the top-right of the console: currently, you see a smiling Slug. The ascending bar graph below the creature icon represents how much of the SNI fluid limits you have used in your design, with the numerical figure above.

The fluid limits are calculated by each added characteristic value-each positive click of an arrow-button adds 16 milliliters. The limit is 256 milliliters of total fluid per creature. Since we've already got a Slug going, let's finish him up.

Don't click on the Fight arrow button, click twice on the Mate arrow button, twice on Eat, once on Speed, once on Strength, nine times on Stamina and once on Vision.



New Slug Settings

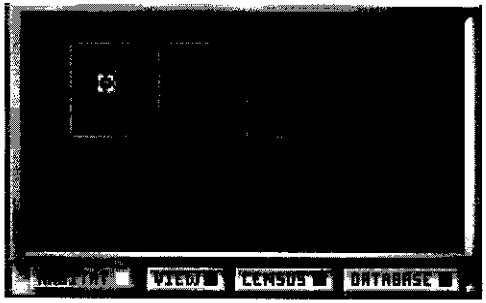
The bar graph will display 256; no more additions can be made. You've created a Slug prototype with an interest in procreation and a body type that would tend to move steady and slow. Let's give them a chance to (slowly) strut theirstuff. Belowtheattribute buttons are a series of buttons labeled 1, 3 ,5, 7, and 9, and one named INJECT. These control the number of Slugs you'll put in the pen and the administration of the SNI fluid.

Click on 9 and then click on INJECT.

You'll see a little animation of your injection act in the top-left of the screen. Your cursor has become a little box with the number 9 in it.

Move the cursor over to the first pen you made and click the right mouse button within the pen walls.

Nine little blue squares will make up a larger square and the bracket cursor will be in their middle. You've deposited nine Slugs in the pen. You can also deposit creaturesoneatatimebyclickingwiththeleft mouse button. You might notice that they're very slow, but that's because you haven't animated them with the Neural Pattern Regulator (NPR) yet, silly.



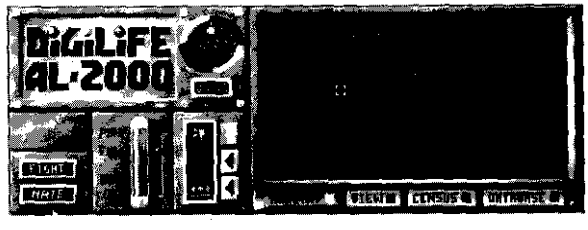
Slug Deposit

Put about SO (nine at a time) or so Slugs in the pen. If all of your injectees don't drop with a mouse click, click in a more open area.

Now click on the Full heading on the NPR tube to the left of the pen magnification buttons.

You will see your Slugs make their merry way around the pen. The NPR tube can be regarded as the "fuel tank" for your Theroids. The higher the level of fluid, the less power given to a creature-controlling radio frequency, and thus the more active your Theroids will be. The NPR frequency puts the animals in a state of physiological suspension; when you click the tube to Max, you are actually turning off the frequency that renders them inactive.

You will see squares of black in various areas after creature movement-those are spots where food has been eaten. Because you have the Food Flow up to 3, those areas will be quickly refreshed. Some creatures will disappear from the pen: they have died. New ones will appear: they are children of your originals. All in a day's work.



Zoom 1

Tom the NPR solution off.

Return to the SNI and decrease the Stamina to six bars, Vision to one, Strength to one, and increase the Speed to eight. Pot about SO Zips in the second pen.

The science of life is a superb and dazzlingly lighted hall which may be reached only by passing through a long and ghastly kitchen.

-Claude Bernard

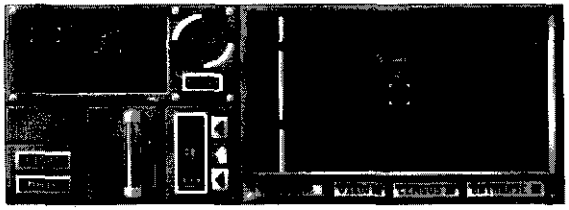
Return to the SNI and decrease the Speed to one and increase the Strength to eight. Place about 80 Hulks in the third pen.

Return the NPR to Full.

TAKE A CLOSER LOOK

The magnification buttons to the right of the view screen give you a more detailed view of your creatures' actions and also let you get right in their faces.

Click on one of your creatures in the Slug pen and then click on the middle magnification button.



Zoom 2

You're in Zoom level 2. This level gives you more details about the pen, walls and food, and some general sense of the movements of your creations. There will be an small overview screen at the top left of the DigiLife's console. You can click in the small view screen on a creature. and the Zoom 2 screen will center on that creature. You can also scroll around the pen itself by clicking or clicking and holding on the right mouse button at the edge of the main view screen in the direction you want to go.

Make sure a Slug' is still selected. Click on tbe third magnification button.

You're in Zoom level 3. Your creature has a face-does it have your nose? Depending on its attributes and its current urges, you might see it wandering around, fighting or even mating and reproducing. (This is better than any 900 number.) You can only use Zoom 3 when you've selected a creature in Zoom 1 or 2. If it dies, you'll be shot back to a lower level of magnification.

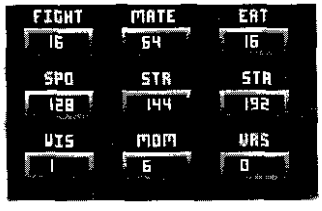
Zoom 3

Now, the best way to ensure interesting propagations is to add a little radioactivity to the environment. This way, all of your children's children can have the possibility of greatly evolved genes, as well as, sad to say, horrifically debilitating viruses.

Click on the 2 on the Mutation Dial below the FOOD button.

This will begin to produce more diversity in your population. Hulks might pop up with Slugs, Zips with Hulks. And diversity, not table manners, is the key to better breeding. If you want to see who's doing the breeding, you can click on the MATE button on the left of the panel. Any numbers in the button indicate current romances. Clicking on the FIGHT button will give you those numbers. Any Theroids engaging in these activities will be highlighted on your viewing screen.

TAKE A SLUG OF THIS



UnNatural Selection provides you with many ways of getting to know your kids a bit better, and getting better kids to know. The View panel is one of them.

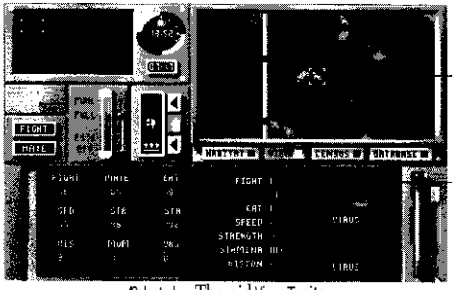
Click on the VIEW button below the main view screen.

The numbered buttons under the attributes on the left side of the panel indicate the highest values for that characteristic within your population. If you click on the buttons, the creatures in your pen with that high value will be highlighted. (MOM stands for Momentum and VRS indicates how many creatures in the population have viruses. See Reference for details.)

Click on one of the Theroids and the right side of the panel will come to life (at least as long as that Theroid is alive).

Your selection can be seen at the top-right of the panel, with its behavior spelled out below. Any current lovers or combatants will be pictured below that. The types of any viruses will be displayed in the boxes below the creature icons. The interests of the selected being are dynamically detailed by the bar graphs to the right of the named characteristic. Attribute names (Fight,

Mate, etc.) are in white type, though the name of its most dominant current need will be in its body color.



'Selected Theroid View Traits

White bars on the Fight, Mate and Eat graphs show the maximum potential for that attribute, and the body color of the creature moving up the graphs represents its current level. A yellow bar at the end of the graphs means it is peaked, maxed out. For the Stamina graph only, yellow indicates how much of the creature's stamina is used up. The small dot graphs under the bars show the levels for lovers or opponents.

ACCOUNTING FOR IT ALL

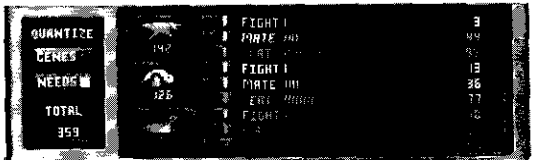
I'm presuming your creatures are thriving in their beastly fashion, and that you've got many to choose from for these observations. If not, just inject some more. You can try different attribute levels if there seems to be a breeding problem, but don't load up Fight or Eat, or you'll just breed a bunch of fat corpses Let's see what you've got so far.

Click on CENSUS. The Census panel will come up.

Click on GENES and then on NEEDS to see the varying figures.

This panel gives you a total population (bottom-left corner), and an up-to-the-second report on current behaviors. When Genes is selected, the numbers of your population with genetics inclining them to Fight, Mate or Eat are given a running count for each body type.

When Needs is chosen, the numbers representingthose Theroids that are currently interested in performing the Fight, Mate or Eat acts are tallied. Buttons for respective body types and for each attribute can be clicked on or off, removing the onscreen highlight If all of those entities experiencing the chosen urge or attribute. You've seen 'em-now let's sort 'em.



Click on the DATABASE button.

The Database panel will appear and the NPR will be shut off. The Database view lets you sort your creatures by characteristic. Clicking on any of the buttons will assign them a sort value, numbered in importance by when they are clicked. A value of 1 means that characteristic is most important, and those creatures with the highest value for that trait will be listed first.

Death and sorrow will be the companions of our journey; hardship our garment, constancy and valor our only shield We must be united, we must be undaunted, we must be inflexible.

-Winston Churchill

If two creatures have the same value for trait 1, then the greater of trait 2 is used to determine which creature is listed first and so on. Only one trait needs to be selected for sorting. You can clear choices individually by clicking again on the trait buttons, or *you* can clear your total sort pattern by clicking on CLR. Your population total is under the CLR button.

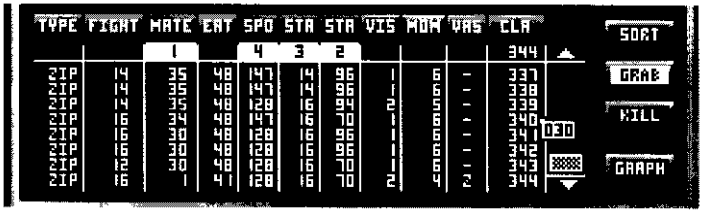
Click on the MATE, STA, STR and SPD buttons respectively, and then click on SORT.

The SORT button will display a running percentage of the total sorted, and the creatures with the highest selected values will appear at the top of the list.

Use the scroll box to scroll toward the end of your list, and then click on GRAB. Your cursor becomes a box with three zeros in it.

Click at a point on the list about 30 animals from the bottom and keep the mouse button depressed.

The cursor box numbers will fill and the "grabbed" creatures will disappear from the viewing screen.



This is the means by which you cull the weak from the strong-you get to accelerate the survival-of-the-fittest evolutions. Grabbed creatures can be repositioned anywhere in their old pen or a new pen by moving the cursor to the selected spot and clicking; one at a time with the left mouse button, all at once with the right. The cursor numbers will decrease accordingly. However, repositioning isn't what we have in mind here.

DO I HAVE TO WATCH?

Click on the KILL button.

The screen will shiver and your Database will show a new tally. You just removed some of your, shall *we say shabbier* creatures and sent them heaven's way. Better put on your dark glasses so no one will recognize you-we're gonna do it again.

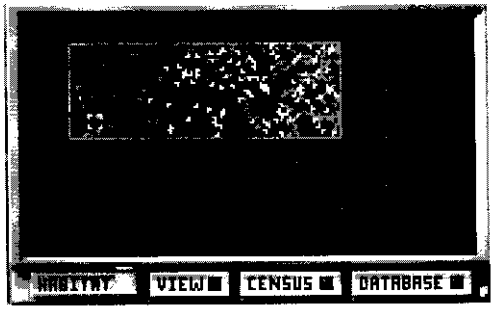
Clear your sort and click on VRS. Click on SORT. Grab all of those animals that display a virus and boot them to Pluto.

Viruses aren't for sharing, you know. What you've done is a little weeding, so that your breeding stock is slanted towards higher production values. It's cold, I know, but a warm heart won't win you any battles.

Click on HABITAT, click on WALLS, and remove the inner walls from your pens. Click the NPR back to Full.

This isn't the best prescription for controlled breeding, but it will produce a real goulash for our first battle encounter. (Check your Reference section for a variety of childcare techniques.) Let your creatures mingle, returning to your Database occasionally to do a little astute killing.

Note in the View level the boosting of trait values through mutation, and sort in the Database for breeding, stamina, strength, speed or fighting ability in whatever assignments you think worthy. Try to get a good base of 500 or 600 creatures, providing them more pen space if necessary.



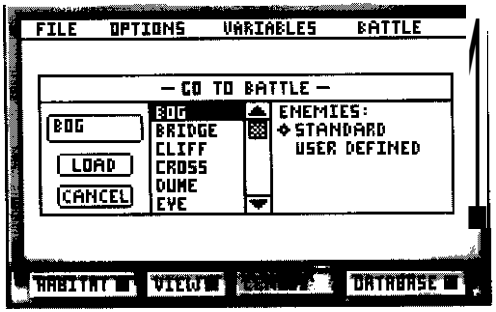
Party In The Pen

Click in the area of the disk drive (on the DigiLife's far right) when you think you've fathered and mothered some mighty creatures.

The viewing screen will be replaced by a menu bar that provides access to file and system commands.

Bring the pointer to File and a drop-down menu will appear. Click on SAVE, type in your goldfish's name (whatever), and hit SAVE. (Might as well keep this as a history lesson.)

Bring the moose to Battle, leave BEGINNER checked, and click on PICK ISLAND.



When the Go to Battle dialog box appears, click on BOG and then click on LOAD. Don't look back.

YOU ARE THE MOTHER OF ALL BATTLES

It's best to get the big picture right away. The central viewing screen displays Bog Island in all its glory, a swampy scoop of land bubbling with two types of Theroids, as you can see. Terrain features will play a part in your future strategies, elaborated upon in the Strategies section.

Click on the BRIEFING button beneath the screen to get an island overview. The controls to the right of its message bar can be used to rewind, forward or replay the message.

The Briefing

The structural concept of the battle encounters is that you are on an aircraft carrier equipped with a lab, where your creatures are held in ready. The panel below the view screen now displays the aircraft (a fleet of six helicopters and one transport plane) from which you deploy your Theroids and cargo to take over the island.
Each craft has a line of information about operating conditions and status. See the Reference section for the Top Secret games variant.

Click on SATCAM.

This is the view from which you launch your planes and observe the results. The Sea Stallion 1 (S.S. 1) is selected by default.

Click on AIRCRAFT and the island view is replaced by an image of the selected craft.

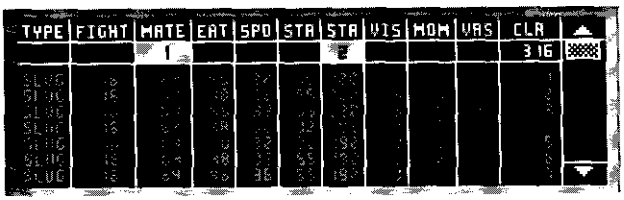
The shadowed squares to the right represent the empty cargo spaces to be filled with Theroids or materials.

Click on LAB and you will see a list much like the first lab's Database.

S.S. 1 is highlighted on the left-hand button below the craft's image.

Click on MATE and STA as the first and second sort values and click on SORT.

After the sort is finished, put your cursor on any of the info entries for the first Theroid and click on the right mouse button.



The human mce has today the means for annihilating itself--either in a fit of complete lunacy, i.e., in a big war; by a brief fit of destruction, or by careless handling of atomic technology, *through a slow process of poisoning and of deterioration in its genetic structure.*

— Max Born

The plane will fill with critters in the mood for love. Loaded creatures are ghosted in the Database.

There are as many battle approaches as there are battle situations. Here the notion is to attempt to get some Theroids reproducing in number before they have any combat encounters. Thus we need to deposit them in an area where there aren't a lot of enemies, trying to avoid the swampiest parts of Bog Island.

Click on S.S. 2 to get to Sea Stallion 2, and fill it as with S.S. 1. Do so for all of the remainiog craft until you get to Sea Knight 3.

Game time is suspended while you are loading your choppers, so don't get anxious that your enemies are reproducing like mutant rabbits.

Click on S.K. 3 and then click on CARGO.

You are given unlimited amounts of the various nutrients and hardware in Beginner level games from the lab. It won't be so easy for other games at other levels. Explanations and instructions for these materials are in the Reference section, but for now, just figure what you might need to get a little lovin' going among your troops.

Click with the left mouse button on LUST until you've filled half the craft with lust-inducing food.

Now click on NORMAL to fill the rest of the copter with some square (literally) meals as well.

Click on SATCAM and then on Sea Stallion 1.

A prince should therefore have no other aim or though, nor take up any other thing for his study, but war and its organization and discipline, for that is the only art that is necessary to one who commands.

– Niccolo Machiavelli

UN NATURAL SELECTION

THESE CHOPPERS AIN'T FOR VEGETABLES

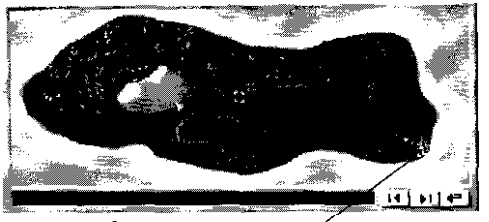
We'll want to place our beasties in a zone without too many opponents so that we can establish a beachhead. I'm choosing the far right of the island, but you can go at it wherever your eagle eyes lead you.

Bring the cursor into the area of the island where you want to make your drop.

The cursor becomes a cross-hair, and a time appears in the ETA column indicating how much game time the transport will take.

Click on the site, and an "A" will appear, matched by the A in the Target column. The Status column will read "Deployed."

Site your other deployments near the first and watch the times for their landings.



Creature Drop

You'll see the bodv colors of your animals on the island when they're dropped and "Returning" appear in the Status column, soon to be replaced by "On Deck" when the craft is ready for refilling. The cargo will show up as a different color. Don't get too engrossed in observing your first sortie though, there's a lot of work to do.

When your planes have all returned, click again on AIRCRAFT. Sort for Fight, Strength and Stamina.

Fill each chopper with feisty brutes, but fill the last one with Rage.

Click again on SATCAM, and this time throw them into the thick of it to see if you've got any heavyweights.

I'm placing this batch near the Hulks on the left edge of the island. Try to place the Rage cargo near your animals, not theirs.

Click on FRIEND to see the constantly updating numbers of your troops. Do tbe same for ENEMY.

Choosing these buttons will highlight their respective entries on the viewing screen and ghost the opposites.

Click on FlGHT to see how many of yours and theirs are tussling.

You may see the fighters that you dropped near the Hulks haven't done so well, because you really didn't breed for fighters. Hey, lovers can win too.

YOU CAN FIDDLE WHILE ROME BURNS

All of your scheming to this point has been done at the Command level, as seen by the highlighted COMMAND button to the view screen's right. Above that button is the other level, View, along with the same magnification buttons as seen in the lab. You can use the magnification buttons from both the Command and View levels, but individual creature selection to access behavioral info must first be done in View.

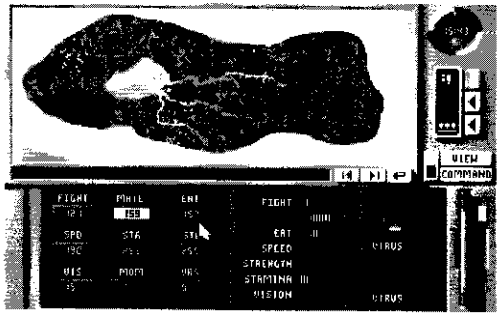
Click on VIEW and you'll see the trait buttons that you saw in the lab's View panel. They operate the same way.

Click on MATE to see which Theroids have the highest value for tbat need.

Click on one of the highlighted creatures and the right side of tbe View panel will reveal the current behaviors as seen in the lab's View.

Click on the various levels of magnification to get your Voyeur of the Year award.

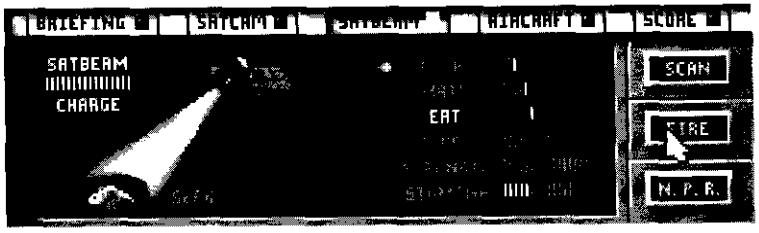
Click the MATE button off and then select an enemy Hulk at Zoom 2 in an area where there are many enemy Hulks and none of your lads.



Click to return to the Command level.

We'll examine one of the uses of the Satbeam, which can give a behavioral "boost" to any of the urges or attributes that your selected creature might have. The Satbeam can be used to enhance or direct the actions of your own creatures, but here we'll try and use it to turn the Hulks' advantages against each other.

Click on SATBEAM, click on FIGHT and click on FIRE. Tbe **behavior** graphs work the same as tbe ones in the lab View.



Choose another nearby Hulk and click on FIRE. Tbe beam will deliver whatever level of charge is indicated by the yellow bars, and will influence your chosen creature to get nasty.

Choose a bunch of Hulks and get them riled, so that they might kill each other.

Click back on SATCAM to get a look at bow your other troops are doing.

The art of war is simple enough. Find out where your enemy is. Get at him as soon as you can Strike at him as hard as you can and as often as you can, and keep moving OR.

-Ulysses S. Grant

MAKE A JOYFUL NOISE

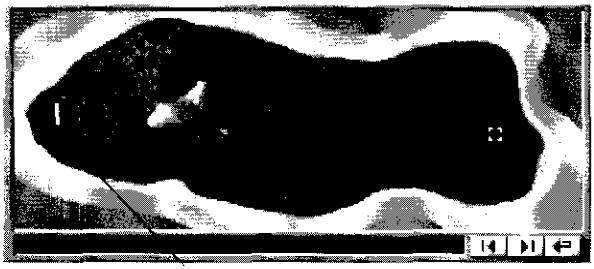
So far, we've been a bit casual about troop deployment, since you're just getting acquainted with the battle commands and all, but ifyou'rereallyintent on taking an island, and you've advanced from the treacle-on-toast Beginner mode, you must deploy troops in a more rapid, decisive fashion, and keep piling them on to overwhelm the enemy.

Click on AIRCRAFT and fill five of your choppers with some strong maters. For the sixth, click on CARGO and put in a vertical row of five Noisemakers.

Click on SATCAM and then deploy the Noisemaker cargo on the island's left side so that they don't land in the swampy zone, but so that there is an enclave created behind your cargo drop, deterring the movement of the enemy creatures.

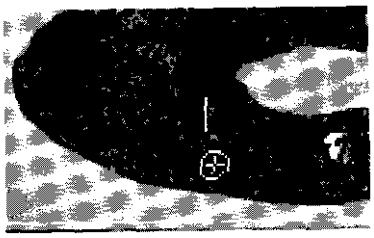
The Noisemakers will temporarily drive away the enemy Theroids, and you will have an area to breed without interference.

Deploy your troop planes so that they land after the Notsemakers are placed. Click on the C-130 and noting its quick ETA, bring its crosshair into an area close to your troop deployment, drag it from a clicked point of the cross-hair cursor down about a half-inch.



A Line Of Noisemakers

This will rapidly deposit a swath of food in the cursor line's direction. C-130 drops can be quickly replenished over and over. It's important to continue with both troop and cargo replenishment. A little more Lust never hurt anyone, did it? You might want to throw a bunch of Decoys in to where the heaviest concentration of enemy fighters is, because the Decoys will become mating for fighting targets for those ignorant enemies, who will waste their energy fighting and mating with inanimate lunks.



C-130 Food Placement

Of course, you don't want your troops too close to the Decoys, either, because your kids might be a little slaphappy themselves. You can always use the SatBeam as well to give those enemies another push in the wrong direction.

Click on the VIEW button to see how evolution has broadened the genetic path of all of the island inhabitants.

Nothing is easy in war. Mistakes are always paid for in casualties and troops are quick to sense any blunder made by their commanders.

Dwight Eisenhower

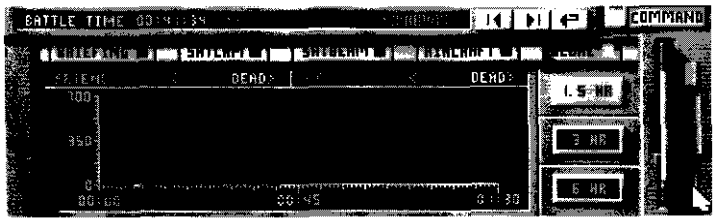
DID YOU SCORE?'

Click on the COMMAND button and then on the SCORE button to get a running tally of your success.

The Battle Time line records the game time elapsed since you came to Bogland, and the highlight bars show the respective strength in numbers of the good and bad guys. The panel below shows the respective living and dead for both sides, with a graph color-charting the fortunes of the principals mentioned.

Click on 3 HR or 6 HR to see the course of the contest projected over time.

If the news there is discouraging, you better get out and fill some planes. Try sorting for different properties, and make your deployments tighter or over a broader plain. Maybe collect all of your creatures with viruses and throw them into your enemies with a bunch of Lust-you might get lucky and make them breed some one-eyed losers. See if mixes of cargo and creatures makes any difference. If you do win the island, good for you, but don't crow about it. Move up a skill level and see what that's like.



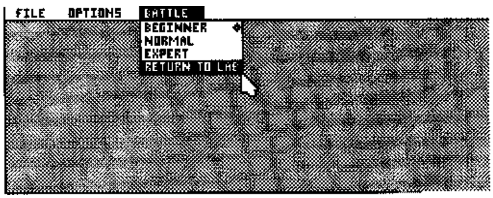
Maybe I'll Take Up Ping Pong

RUN AWAY! RUN AWAY!

However, if you've run out of Theroids and you don't find any amusement infeedingyourenemies doses of Lust and Rage, there is a way out.

Click on the disk drive button, choose BATTLE, and highlight RETURN TO LAB.

You'll see a dialog box asking you to save the experiment, and that's up to you. After that choice, you'll be placed back in your original lab, minus the creatures that perished on the island. You can now go back to the genetic drawing board.



If you're getting the idea that there are many possibilities, let me tell you that's a good idea to get. You now understand the principles of gameplay, but the beauty of UnNatural Selection is that there are a thousand and one approaches Each island is different, and since each batch of creatures you bring to it is different, the possibilities of genetic expansion and aberration are endless. There are some very precise and powerful methods found in the Reference section to control or influence behavior, genetic disposition and other laboratory variables.

Look over the Textbook Experiments section for tips on pen construction, selective breeding, mastery of the Database and much more. Look over the Strategies section if your FRIEND count for this island ended up less than zero. Look over the Reference section for in-depth explanations for all game functions and commands. And look over your shoulder-those Slugs are slow, but one is gaining on you.

What is man without the beasts? If all the beasts were gone, men would die from great loneliness of spirit, for whatever happens to the beasts also happens to the man.

-Chief Seattle

REFERENCE

Observation is a passive science, experimentation an active science.

-Claude Bernard

REFERENCE

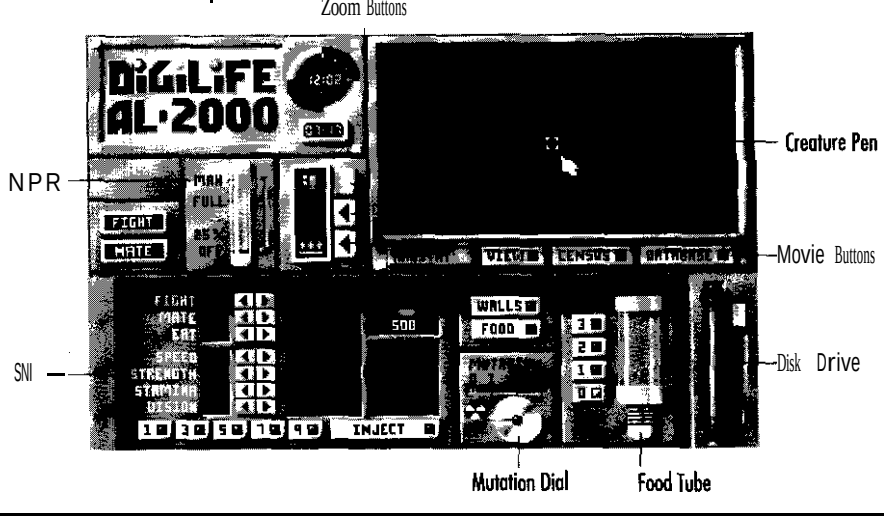
This Reference section for UnNatural Selection will thoroughly explore all of the windows, menus and commands of the game to provide you with both laboratory savvy and battlefield cool. There is also a Strategies chapter towards the end of this section. Also included in the Reference section is a "The Ways of a Theroid" chapter, which reveals some of the means by which the simulation charts and regulates creature genetics and behavior.

THE BASICS

WHO ARE YOU AND WHY ARE YOU HERE?

You are a truly brilliant person (as evidenced by the fact that you purchased this game). In the game you are Dr. Ted Jackson, a genetic engineer specializing in Artificial Life design. Along with your partners, Dr. "Andy" Andrew and Dr. lngrid Skinner, you have been trying to breed new types of animals, called Theroids, as a cheap, efficient food source to end world hunger.

You have at your disposal the DigiLife AL2000, the most advanced computerized Artificial Life laboratory in the known universe.



Everything was going great, until six months ago, when Dr. Skinner disappeared with several Theroid specimens. Next thing you know, some colonel named Griggs accused Ingrid of breeding mutant killer Theroids that are taking over a chain of islands.

That's bad enough, but now he wants you to breed your own monster Theroids to combat hers-and to strategically deploy them in a campaign to capture her island outposts. Maybe you should have bred giant vegetables instead. Well, it's too late now, the game is on.

PARTS OF THE GAME

Winning UnNatural Selection requires mastering two different parts of the game, demanding different skills:

- In the lab, you selectively breed creatures for specific traits or combinations of traits (size, strength, stamina, vision and primal urges) through controlled experimentation.
- On the battlefield, you must strategically deploy your genetically engineered fauna to war against formidable opponents on a series of islands.

WHAT'S A THEROID?

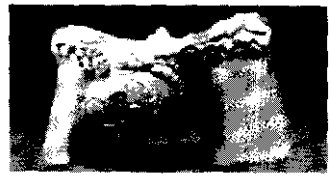
Theroid is the generic name for the artificial life-forms that you can create in the lab.

There are three basic types of Theroids: Zips, Hulks and Slugs, and there are fundamental differences between the three. Zips are just that: zippy-their predominant characteristic is speed, greater than or equal to their strength and stamina totals. Hulks are the brawny beasts; their strength figure outweighs the speed/stamina count. Slugs have the greatest staying power; they have much more stamina than Zips or Hulks. However, within these broad definitions, you can be much more specific. You can make one

bunch of Hulks that are faster and that hanker to hunker down with a honey, and another bunch with great eyes and a big urge to punch the other guy's lights out.

All Theroids are hermaphrodites-having both male and female elements--and can mate with any other Theroid, no matter the body type, unless you specify otherwise.

A Slug



A Hulk

A Zip

TYPES OF GAMES

There are two ways to play UnNatural Selection: Top Secret games and Independent Research experiments.

TOP SECRET GAMES

Top Secret games are the "real" games in UnNatural Selection. They begin with your briefing from Colonel Griggs. He has transferred your complete lab to an aircraft carrier and Dr. Andrew is busy hooking up all of DigiLife AL-2000's modules. As you start your mission, only the basic lab functions are working, but over time Andy gets the whole lab installed. You've got to breed a strain of Theroid that will be able to defeat Ingrids's beasts-and you'll need a lot of them.

And you'll have to work fast. Before long Colonel Griggs will be contacting you, putting the pressure on to take your Theroids into battle.

You win your Top Secret mission when you capture all nine islands, one-by-one.

INDEPENDENT RESEARCH

Independent Research is both a good practice mode to learn the workings of the DigiLife AL2000 system for breeding, mutating and modifying Theroids, and an Artificial Life laboratory for your own use. At the end of this manual are a series of Artificial Life Textbook Experiments (accompanied by their complementary disk file) that you can try, or you can devise your own User Experiments.

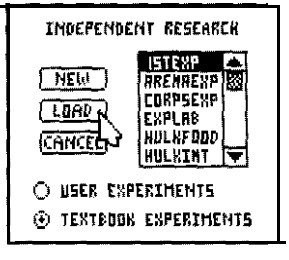
Of course, lab work is fine, but to prove the value of your research, you have to do field experiments-set your creatures loose on any of twenty-four different islands (the nine Top Secret islands must be conquered first to make them available for experimentation). On the-se islands you can pit your newly-breds against creatures supplied by the game default, or you can define the characteristics of your own foes through some lab options.

STARTING GAMES

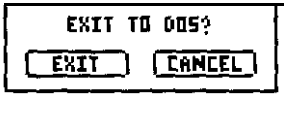
After the game's title screen is displayed, the next screen displays a desktop with a folder marked Top Secret, a lab book marked Independent Research, and a computer keyboard.

Clicking on or near the Top Secret folder opens a dialog box that lets you start anew Top Secret game, or load in a previously saved game. Click on NEW to start a new game, completewith the introductory story "movie." Click on the name of a saved game then click on LOAD to pick up where you left off. You can also click on CANCEL and return to the desktop if you chicken out.

clicking on or near the Independent Research lab book brings up dialog box that lets you load in an existing experiment, or start new one. Click on NEW to start a new User Experiment. Load an existing experiment by clicking on its name then clicking on LOAD. Click on the button next to either User Experiments or Textbook Experiments to choose which experiments to display. Click on CANCEL if you're feeling moody and all you want is out. You will be returned to the desktop.



Clicking on or near the computer keyboard opens a small dialog that lets you quit the game and exit to DOS.



LATE NIGHTS IN THE LAB

In the lab, you are at the helm of the DigiLife AL-2000, a genetic engineering engine with powerful instruments and controls for the construction, observation and manipulation of your Theroids. The DigiLife computer allows you to make broad, sweeping changes to behavior patterns for masses of your life-forms, and also subtle, genetic building-block adjustments that fine-tune a creature's character.

When you embark on Independent Research experiments, you will instantly and always have complete access to all laboratory modules. In a Top Secret game, your access is limited at first, for an extra challenge.

It is part of UnNatural Selection's intrigue that its Artificial Life simulation engine brings about so many dynamics in the behaviors of its life-forms. There are many combinations of attributes whose mixing will produce varied behavior patterns. Those patterns in concert with creature matings and creature melees can result again in a wide range of genetic evolutions, a la Darwin. Your motivations can be as benign as wanting to observe how different creatures behave in varied lab settings, or as crafty as wanting to build the ultimate fighting machine. DigiLife's power gives you all options.

The advance of society is not comparable to the changes of a city, where old edifices are pitilessly tom down to give place to new, bat to the continuous evolution of zoologic types which develop ceaselessly and end by becoming unrecognizable to the common sight, bat where an expert eye finds always traces of the prior work of the past centuries.

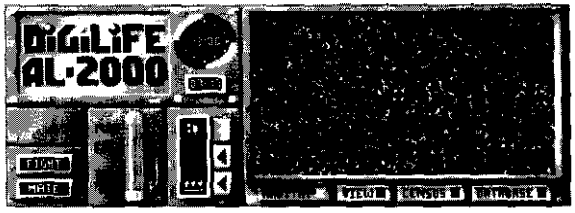
-Jules Henri Poincare

'BRIEF LAB OVERVIEW

The lab has a host of integrated components that will make your creaturedesigning, breeding and weeding a thing of delight, even if you were absent on the day your class dissected the frog.

CONTROL CONSOLE

The Control Console of the DigiLife contains the main view screen, thegameclock, the Zoom buttons for the view screen, the Neural Pattern Regulator (NPR) control-the game's "speed gauge"-and the FIGHT and MATE buttons. The lower half of the DigiLife varies in appearance and function, depending on which of the Habitat, View, Census or Database modules are chosen.



The Control Console

THE MODULES

The Habitat module (the opening lab default) presents you with the Synthetic Neural Injector (SNI). This device lets you specify creature characteristics, and lets you define, with the Walls, Food and Mutation features, the physical environment for your Theroid development.

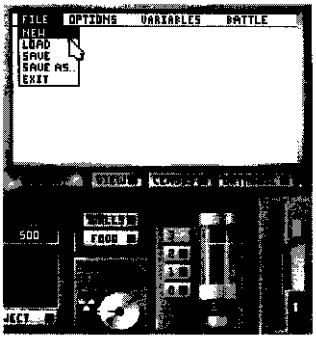
The View module gives you access to a panel of traits can buttons, letting you see the Theroids in your lab population with the highest values for significant traits. The current behaviors of selected creatures are gauged in the profile box to the right of the scan buttons.

The Census moduletallies populationcounts among your Theroid body types and quantifies current behaviors according to genetic makeup and the most pressing needs of the animals.

The Database module has two parts: The Graph function charts a specific action or attribute over time for each of the body types as a collective, and the Data function lets you sort creatures for selected characteristics, allowing you to encourage the strong and eliminate the weak.

THE DIGILIFE DISK DRIVE

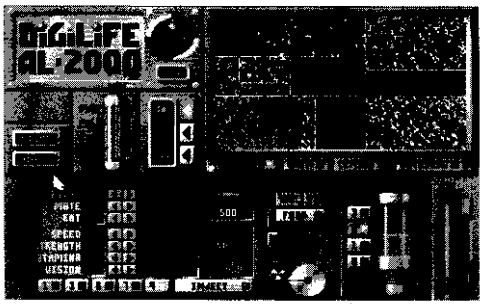
On the right-hand bottom of the screen is a representation of a disk drive that gives you access to the system and file commands for entering, exiting and saving games and experiments. It is available both in Lab view and Battle view. no matter which modules are active. There are some different menu choices and game options depending on whether you begin with Top Secret games or Independent Research experiments.



From the Independent Research mode of these menus you can open the Body Variables and Lab Variables panels, which provide powerful tools for shaping and fine-tuning the genetics and environment of your Theroids.

IN THE HABITAT: NEW EXPERIMENTS

Newexperiments begin at the Habitat level of the DigiLife 2000, the place in which Theroids of your design are given life. The top halff of the computer's console is dominated by the viewing screen off the enclosure where you'll raise the little beasties. The initiall screen is blank but for a small white bracket in its middle. When the screen is active with creatures, you can click on individual Theroids with your mouse and they will be "captured" by this bracket, so that you can see them at other levels of magnification and also chart their behavior urges and patterns.

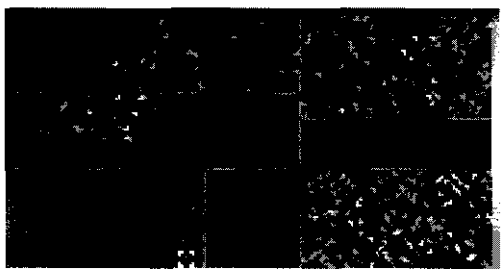


At the top left of this view screen is the game clock, which displays game time on a 24-hour cycle:e.g., 14:00 represents 2 P.M. Seconds are tallied in increments of five by the circle of lights on the clock's radius. The day and

month are charted in the small box below. It will prove useful to generally note how long it takes for certain types of Theroids to breed, fight, eat or die off, and those measures use this clock as their governor.

Below the clock is the lab's magnification control, the series of descending buttons with the small patterns to their left. Both the button and the pattern will highlight when selected, and the level of zoom will be reflected in the view screen. The top button is Zoom 1, the overview level. When clicked, the view screen will display the entirety of the pen, whether or not the creatures are active, and regardless of whether you have placed food and/or walls in the pen.

This is the Big Picture level, showing you your creations as tiny (though selectable) dots that wander and swarm over the viewing area. Theroids that die will disappear from the screen, while newborns will pop up as proud as any other wandering dot. The Theroids will be distinguishable in type by color differences.



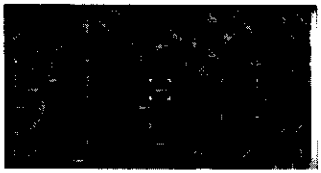
Zoom 1 Theroids

Clicking on the second button will bring you to Zoom 2, magnifying the tiny dots into more robust blobs whose movement and behavior patterns are more discernible. If there are no animals, Zoom 2 will just display the empty floor of the pen, with its slots for wall placement. If creatures are placed in an empty pen at Zoom 1, one will be automatically bracketed, and that one will be centered on when Zoom 2 is clicked.

You can select other creatures for observation by clicking on them with the mouse. You can also scroll in Zoom 2 by clicking or clicking and holding the right mouse button near the edge of the viewing screen window, in the direction you want to scroll.

The view screen at Zoom 2 zeroes in on a small section of the overall pen around your Theroid selection. You can see an overview in the small window to the left of the clock that comes up when you select Zoom 2; the bracketed area is what's magnified on the big screen. You can click on the tiny images of the creatures in the little window to center both view screens on that creature, but it's a lot easier to do it in the main view screen.

Food trails and behaviors such as mating and fighting can be witnessed on the main screen, but Zoom 2 is best used as a staging area for selecting the Theroid that you want to get up close and personal with in Zoom 3.



Zoom 2 Theroids

Zoom 3, the third button of the magnification controls, gets in the face of your creations-you're a Peeping Tom with a purpose here. Any creature selected in Zoom 3 will be displayed in all its full-blown animated glory on the view screen, as long as the NPR (see below) is set to at least 25%. If it's not turned on, neither will your creatures be-all you'll see is a screen showing what hap pens if you don't pay your cable bill.

The chosen Theroid will be the prime actor in his own drama: you'll see him (actually it's him ***and*** her, since all Theroids are hermaphroditic, and will fight or fornicate with whomever or whatever comes along, unless programmed not to) wander around the pen, eating food, mating, sometimes breeding, sometimes fighting and sometimes dying—all in a day's work. If your chosen one does die, you'll be immediately transported back to Zoom 2, for another pick.

Zoom 3

NPR

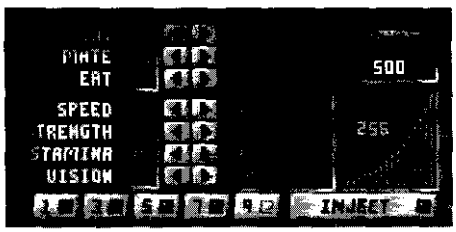
The Neural Pattern Regulator is an electronic device, similar to a radio transmitter, that controls the brain functions, and thus the actions, of the Theroids. The NPR gauge itself appears to be a "fuel tank" for your darlings, and it can be used in that sense to control their activity levels. Clicking on the level labels raises the fluid in the tank, though it actually decreases the radio transmission that keeps the Theroids in a state of suspension.

The higher the tank level, the lower the strength of the frequency. Thus when the setting is at Max, the NPR is completely off, and your Theroids are at their most active. The NPR tank will be automatically drained when you are operating the Database functions in the lab.

THE SYNTHETIC NEURAL INJECTOR: GROW YOUR OWN

When the Habitat module is active, you can see the Synthetic Neural Injector (SNI) panel below the Zoom buttons. The SNI is where you can set specific characteristics for a single creature or large groups. On the left side of the panel are a series of behavior attributes or qualities, followed by left and right arrow buttons that adjust the attribute values: click on the left-facing arrow to decrease the values, the right to increase. The series of bars to the right of the buttons will highlight according to how much weight you give to the individual attributes.

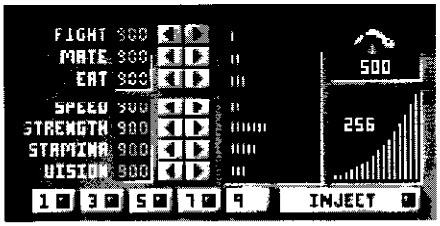
The top three attributes, Fight, Mate and Eat, represent the needs or urges of the creature you construct. You can slant the behavior tendencies of a creature so that it is more interested in making love than making war, or you can design them so they most readily think about making breakfast. The bottom four attributes, Speed, Strength, Stamina and Vision, are determinants of the animal's physical makeup.



The SNI

By clicking on the < or > buttons, you make a behavior composite: you can distribute its needs and bodily properties in an even or staggered fashion, but you are limited by the SNI mathematics: each highlighted bar represents 16 milliliters of the assigned trait's SNI fluid, and a creature's total cannot exceed 256 milliliters. You don't have to use up all 256 when you make a type.

Each click on the add button for Theroid properties will highlight a bar on the graph, and the bar chart next to the arrow buttons will fill, as well as display the trait fluid tally. Above the bar chart is an image of the type of creature that will be produced by your tinkering. The image will change according to the distribution of values you assign to your creation.



A Hulk In The Making

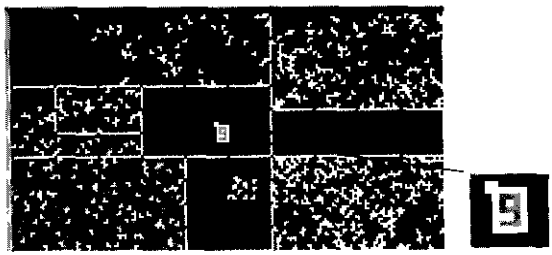
The 900 figure that is to the left of each creature attribute in the SNI is only relevant in the Top Secret game mode, one of your challenging limitations. It is the total milliliter SNI serum amounts you can use in your monster design for each attribute, and you can only create 500 new creatures total, though of course they can reproduce on the island. (The SNI fluid is resupplied after you win an island.) The 500 figure underneath each creature icon is also only active in Top Secret games; it is the serum limits that are "neutral"; they can be used to assign any of the attributes.

The chess board is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of Nature. The player on the other side is hidden from us. We know that his play is always fair, just and patient. But also we know, to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance.

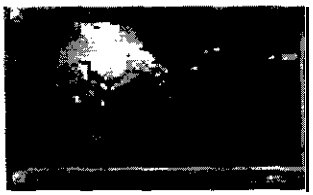
-Thomas Huxley

BODYTYPES: A MEDLEY OF MONSTERS

It's here in the lab that you winnow out the winners from the losers in that great Darwinian dance: Which traits make for the fittest survivors? Which traits make healthy (and productive) mates? You can find out quickly after you've clicked in your Theroid potentials by injecting your beasts with the SNI controls, located underneath the trait assignment controls.



There are a series of buttons there with numbers on them. The numbers represent the number of Theroids that you will transfer to the lab after injecting them with the SNI fluid that you've calibrated. Clicking on any numbered buttonwill highlight it; click on INJECT and your cursor becomes a small block with the selected number highlighted within. You will see (in place of the DigiLife's label) an animation of your creature type being injected with a substance that brings it to life.



SNI Injection

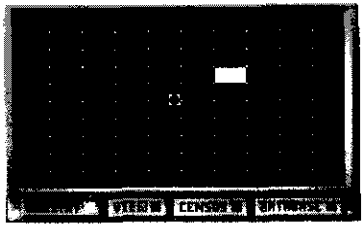
Wherever you next click in the main view screen with the numbered cursor will be the deposit spot for your creatures-clicking on your left mouse button will place them one at a time, and clicking on the right will drop them all at once, if there is room. You can place them at both Zoom 1 and 2, though 1 gives you more of an overall perspective. If the NPR tank is not set to at least 25%, your creatures will be inactive.

THEROID CARE AND FEEDING

The NPR device gives your creatures the initial kickstart, but they will lose their motivation soon without sustenance. You can regulate food placement and flow with the food controls below the main view screen. Click on the FOOD button in either the Zoom 1 or 2 views; in Zoom 1, a green grid pattern will light, delimiting the separate cells of the pen in which you can place food.

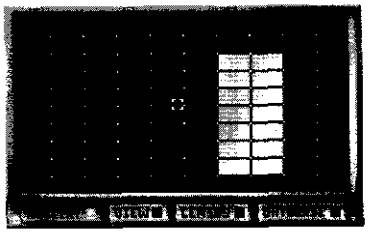
When the food button is clicked, it will highlight, and within the pen area your cursor will become an outlined rectangle the size of a cell. Clicking in any of the cells will place the food, as long as you have chosen a food flow level from the Food Flow tube to the right of the FOOD button. Clicking again in a cell will remove food.

The Food Flow tube controls the initial placement and food growth potential of the selected cell. Click on the buttons left of the tube for the desired level; they will highlight. A choice of 0 will stop food flow and will imperil your animals. Choosing 1 provides a light flow of one refill every 240 seconds; 2 refills the quadrants every 120 seconds, and clicking on 3 provides food replenishment every 60 seconds.



Food Grid

You cannot choose different food flow levels for different quadrants, and increasing or decreasing flow levels at later points will affect all initial food settings. You can "paint" the food into the pens by keeping your mouse button depressed and then dragging the rectangle through the quadrants you want filled. Food placement and flow levels are visible in the view screen at Zoom 1 and Zoom 2, with Zoom 2 providing a close-up view for placement and adjustment.



Placed Food

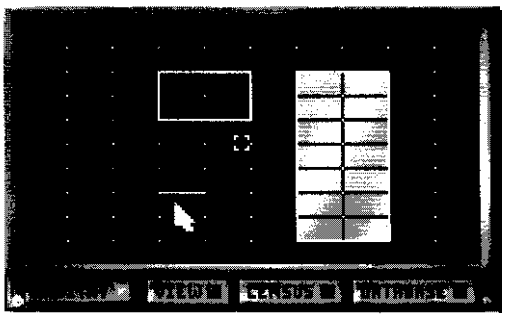
Though you will probably keep both the NPR and food levels at their maximum to promote development, you might occasionally lower the NPR level to slow things down for observation purposes, and lower the food levels to thin out populations. See the Textbook Experiments section for suggestionsonfoodutilization and theory testing.

PEN CONSTRUCTION: GOOD FENCES MAKE GOOD NEIGHBORS

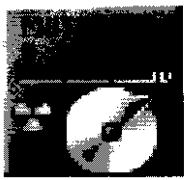
Clicking on the WALLS button below the view screen gives you building permits for your pen. You can place walls to divide your various types of creatures fromoneanother, subject some to food deprivation, some to the richest of meals, test mating attractions and (literally, with the Vision setting) blind dates, see which are most mobile, etc.

When the WALLS button is clicked (it highlights), a red grid pattern will appear on your view screen at Zoom 1. Your arrow cursor will have a horizontal line attached to it when you bring it within the pen, and clicking the mouse button will place the wall in the "trench" of your choice around some quadrant. Pressing on the Shift key will produce a vertical wall, which is also placed by clicking.

You can remove walls of both variety in the same manner; just click on them again and they will vamoose. You can place and remove walls in the same fashion in Zoom 2, though only on a much smaller scale. You can place or erase rows of walls by keeping the mouse button depressed and dragging over multiple walls; use the Shift key for verticals.



Walls can't be placed when a creature is in the way, unless you click with the right mouse button, in which case the placed wall will kill any creatures in the wall's path.



THE MUTATION DIAL: HERE A MUTANT, THERE A MUTANT

The Habitat lab view provides an opportunity for chance to tamper with your toys: the introduction of radioactivity in the pen by way of mutagens that can-though not always and not to every one–give your creations some nasty viruses that they can then pass on to their progeny, and also change their genetic properties, for better or worse.

Beneath the WALLS and FOOD buttons is the Mutation Dial, which is operated by clicking on the numbers above the dial. Choosing 0 will produce no mutagens, 1 introduces a low level of mutagens, 2 a moderate level, and 3 a high level.

These mutagens, radiation levels in the environment, can cause the creatures to develop the ability to pass on viruses that can cause sterility, blindness or a reduction in stamina to their offspring. Creatures with a virus can then pass that virus on to their offspring. You can produce batches of creaturesriddledwith viruses and also hungry to mate, and then introduce them to enemy creatures so they will have weakened offspring. This is a dating service with a vengeance.

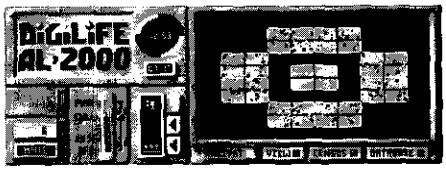
When mutations occur, they can also change any of the passed-on parental attributes in the offspring. This is one of the most powerful variables in UnNatural selection, and is the means by which you can cultivate ever more powerful creatures. You might breed Arnold Swartzenegger Theroids, or ones made like Woody Allen. With no mutation level chosen, the attribute levels of offspring will be a combination of the parents' original levels with no evolution. See the Variables chapters for elaboration.

I often say (a great doctor kills more people than a great general.

-Baron von Leibnitz

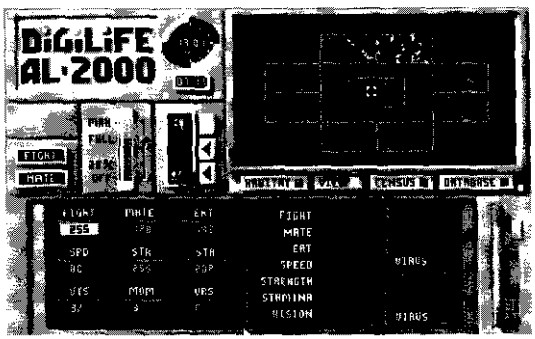
COUNTING FIGHTERS AND LOVERS

Once the pen is swarming with Theroids, you can get a body count of which ones are currently fighting or mating by clicking on the FIGHT or MATE buttons to the left of the NPR tube. The selected button will display who's in a bad or romantic mood. The on-screen view will highlight those displaying the activity type. You can only have one button active at a time.



A LAB WITH A VIEW

The lab's View module is accessed by clicking on the VIEW button (which will light), bringing up a panel of information buttons and readouts. There must be Theroids present in the pen for any of the View functions to operate. On the bottom-left side of the screen are a series of nine numbered scan buttons that will highlight when clicked. You can only choose one button at a time. Each button has a trait description above it and a number in its center that represents the highest value for that trait within all of the creatures in the pen.



Count The Fighters

When you click on a button, all the creatures wlthin the pen who have that high total for that attribute will highlight; all the others will be grayed out. You can see this on the main view screen at both Zoom 1 and 2, and at Zoom 2, the upper-left view screen will show a pen overview. The VRS button will display the total number of creatures with viruses.

For example, there could only be one creaturewithin the pen that has the highest value for Speed, or a hundred Theroids that have the high count for Eat. The nine behaviors or characteristics represented are Fight, Mate, Eat, Speed (Spd), Strength (Str), Stamina (Sta), Vision (Vis), Momentum (Mom), and Virus (Vrs).

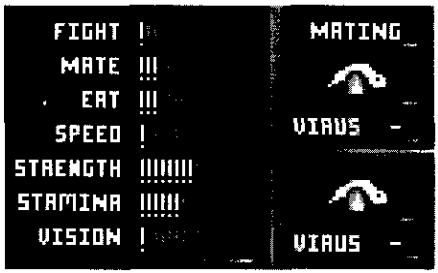
The button numbers will update according to whether all of the creatures that carried a certain high value die or evolve, and the evolved traits of newborns. You can use this panel to chart which characteristics seem to enhance survival under varying conditions (food abundance and shortages, low and high NPR, etc.), and to see how breeding can produce alterations in your original Theroid design.

To the right of the button panel is a profile chart to track individual creature behavior. Theroids that are chosen with the mouse at either Zoom 1 or Zoom 2 will have their behavior and genes gauged by the lighting or dimming of the bars to the right of the charted categories. Fight, Mate and Eat reflect the fluctuating needs of the creature, while Speed, Strength, Stamina and Vision are genetic traits that are invariant. Theurgethat is most pressing in the creature is indicated by the highlighting of its name (Fight, Mate or Eat) in the color associated with its body type, while the other attribute names will remain highlighted in white.

The needs bars will fluctuate in color; white is the maximum potential of an urge, and yellow means the urge is presently at its maximum. The bars will highlight in the creature's body color as the urges escalate. For the Stamina characteristic, bars highlighted in yellow indicate how much of the creature's Stamina is being taxed; if all the bars highlight in yellow, your creature is on its way to the Great Void.

To the right of the bar chart is an icon of the selected Theroid, with a description of the creature's present action above the icon. The possible creature actions are: Wander, Eat, Search, Seek, Fight. Mate, Escape or Dying, and these actions can be witnessed to a crude degree at Zoom 2 and up-close and personal at Zoom 3.

Below the Theroid icon is a text box revealing which, if any, of the possible viruses the creature possesses. Below that is another box that will display any creatures that your selected creature is interacting with (fighting, mating) and whether that creature has any viruses. When your chosen beast is having an exchange with another, the genetic makeup of the other can be seen as highlighted dots underneath the highlighted bars of the chosen creature. If your selection dies, it will disappear from the main view screen and the View panel.



Two For The Price Of One

The deaths of many of your creatures without apparent cause (no battles or other interactions) may make you feel like a bad mother, but there can be many reasons: Mate may be set too low, Fight may be set too high, the balance between Stamina and the other prime values may be off, your cooking could be truly lousy try to observe patterns and make adjustments.

The View panel is an excellent means to gauge the moment-to-moment actions of your animals, displaying the full range of their intricate behaviors and actions. Match varied genetic composites against or with others to see if by fighting or breeding you can achieve a Super Theroid, or a particularly weird mutant.

THE CENSUS MODULE: BODY COUNTS

Click on the CENSUS button (which will highlight) to get the numbers on your ever-evolving pen population. The Census panel operates on two levels: Genes and Needs. On the left of the panel, under QUANTIZE, are the GENES and NEEDS buttons. The total pen population is below these buttons. You can't have more than 3825 creatures in the lab (6500 on an island), though that's a nearly impossible figure to reach, no matter how good a mother you are. The total number of creatures in the lab and in battle is limited by available conventional memory.

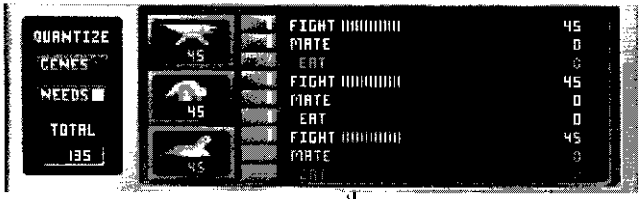
When GENES is clicked, the creatures are color-sorted according to body type and within that sorting, by genetic traits. You can see, for example, how many Zips have a predisposition to be fighters by noting the color of the Fight bars, which will match the color of the creature associated with that property on-screen.

When NEEDS is chosen, the currently highest need level is registered by the numbers and the color coding. A creature could genetically be a fighter, but if its Mate need is higher at that moment than its Fight level, it would be listed under Mate when NEEDS is chosen. As with Genes, the highlight bars next to these categories show which of the behaviors is predominant among the population. The color of the attribute and its highlight bars will match the color of the creatures with those needs on the screen. With large populations, the figures will update rapidly, as births and deaths can slant behaviors in new directions.

Nothing in life is more exhilarating as to be shot at without result.

-Winston Churchill

The body type buttons-Zips are on top, followed by Hulks and Slugs-display the total population of each type below the creature icon. These icon buttons can be clicked on or off (highlighted when on) to display or gray out all of the creatures of that type on the main view screen. To the right of the icons are buttons that highlight when selected and are grayed-out when off. These buttons allow you to turn off the view-screen display of all creatures that have the trait associated with the button, for either Genes or Needs.

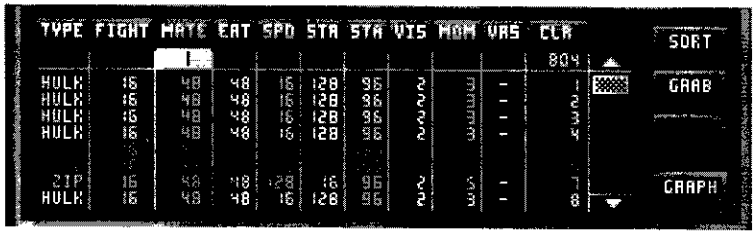


You can use the Genes part of this panel to see which of your creatures are fighters and which are maters, and whether you need to breed more of one or the other. The Needs component can be used to see how rapidly behavioral changes occur, such as when you turn off the food to determine how soon Eat becomes the prominent need.

THE DATABASE MODULE: GETTING TO FIRST BASE WITH ALL THIS DATA

Click on the DATABASE button to open up a world of observational and sorting possibilities. The NPR tube will automatically drain when Database is selected. The Database module has two components: a Graph view and a Data view. You can toggle between the views by hitting the GRAPH or DATA buttons on the bottom-right corner of the Database panel.

The DATA button gives you access to the powerful sorting capacity of the DigiLife computer. The database can sort among your creatures for the highest values for a single trait or up to 10 traits. When you click on the buttons with the trait types on them, they will be assigned a sort value seen under the trait name: 1 means that trait is the most important--creatures with the highest values of that characteristic will be listed first after the sort. A sort value of 2 means that measure is the second most important. If two creatures have the same values for a trait, then the greater of trait 2 will determine first listing. This sorting process continues all the way to trait 10 to determine "tiebreakers."



Of course, if you only want to sort for the characteristics that seem most significant in creature encounters-Speed, Strength and Stamina come to mind-you can merely assign values to those. Once you choose the traits you're interested in, click on SORT and the Database will bring up the desired rankings. The more creatures, the longer it takes. You'll see the percentage of the Database sorted in the SORT button. Hitting the Escape key or any mouse button will stop the sort.

Once sorted, the Database list can be scrolled by clicking on the scroll arrows on the right of the panel or by clicking, holding and draggingonthescroll box between the scroll arrows. Click on CLR to clear your sort values.

Selecting a creature from the list will highlight it on the view screen at Zoom 1; at Zoom 2 you can see it and other selections on the small overview screen as well as the main view screen. You can examine the genetic composition and the current need of a selected creature by clicking on the VIEW button after selection. Other Theroids will be ghosted both on the viewing screen and the Database list.

THE DARK SIDE OF EUGENICS

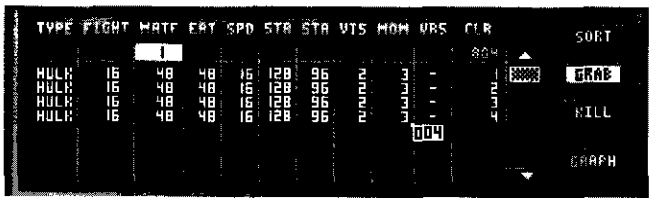
You may find that amidst your shuffling of desirable characteristics, some clear-cut undesirables emerge, and UnNatural Selection lets you accelerate the survival-of-the-fittest process: you can send those unfit to serve into Digital Darkness, using the Grab and Kill commands. Hey, in all games there are winners and losers....

I remember the rage I used to feel when a prediction went awry. I could have shouted at the subjects of my experiments, "Behave, damn you, behave as you ought!" Eventually I realized that the subjects were always right. It was I who was wrong. I had made a bad prediction.

– B. F. Skinner

The Grab command lets you select a single Theroid or groups of Theroids for repositioning in hte pen or repositioning into oblivion. You can sort for your most desirable attribute and put those creatures in a separate pen for breeding purposes.

Click on the GRAB button and your pointer will turn into a little box with three zeros in it. You can directly grab particular Theroids from the view screen by clicking on them (Zoom 2 is easier), and they will be highlighted yellow in the Database list, and the cursor box numbers will increase by one. If you grab a creature by clicking on it in the Database list, it will go from its highlight color in the view screen at Zoom 1 to a black box; in Zoom 2 it will disappear from the screen.



Grab A Fistful

You can select large numbers of creatures by clicking and keeping the mouse button depressed at the top of a bunch you want to grab from the list—the beasts will "scroll" into your cursor box and their numbers will rise accordingly. Once you've grabbed your victims, you can replace them in a pen by clicking on the main view screen at the desired position. Clicking with left mouse button will replace them one at a time, and clicking with the right mouse button will replace them en masse, or as many as will fit in that spot at once.

If you've decided that your grabbed ones aren't fit to be in your pen, clicking on the KILL button will teach them a permanent lesson: the Theroid total will reflect the subtraction of those inferiors, the box cursor will go back down to zero, and you'll feel thesweetsatisfactionof masterly cruelty. Clicking again on GRAB will return your cursor to normal.

You can use the Database to track the evolution of your entire population (and "cleanse" it), and to keep track of and weed out viruses. The Grab function is also one of the means by which you can save Theroids for use in other experiments; read the File and System Commands chapter below for amplification.

THE GRAPH VIEW

Clicking on the GRAPH button brings up the Graph view, where you can click on each of the characteristics buttons across the width of the panel to graph what percentage of your critter population carries a selected trait over a period of time. Actively graphed traits will have a highlight line under their names. Each creature body type is represented by a differently colored line on the chart. You cannot select creatures in the view screens when the Graph view is active.

To the right of the action buttons are two (highlighting when selected) buttons to choose the time range over which changes are charted: 90 minutes and 3 hours. The horizontal axis displays the elapsed time and the vertical, the population percentage for each category. The Graph traits are as follows:

Type	Population per body type
Fight	Average fight level per body type
Mate	**Average mate** level per body type
Eat	**Average eat** level per body type
Spd	Average speed per body type
Str	**Average strength per body type**
Sta	**Average stamina per body type**
Vis	**Average vision per body type**
Mom	**Average momentum per body type**

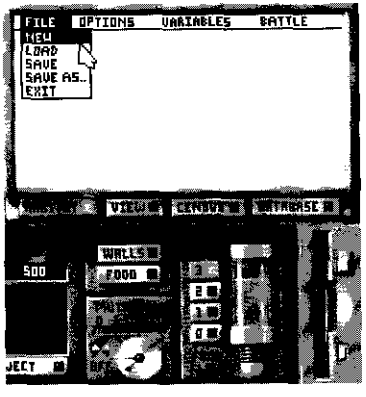
Vrs	**Average population count with each virus**
Clr	Inactive in this view

Use the Graph view to chart the behavior "spikes" of your populations to understand how they act as a mass over a period of time, and how that behavior relates to their success as a Theroid type.

Shrewd use of the various lab panels can give you commanding selectivity in the creation, propagation and understanding of your critters-don't neglect any means in your pursuit of the dominant entity. There are, however, some even more powerful means to creature creation and they are contained within the lab menus, which are explained in the File information below.

FILE AND SYSTEM COMMANDS: SAVE THE THEROIDS!

The lab view has some separate controls for file saving, loading, and experiment options, as well as some powerful adjustments for creature and laboratory variables, and they are accessed by clicking on the disk-drive button (or anywhere in the drive area) at the bottom-right corner of the lab screen. The slightly different system options available in the battle mode and for Top Secret games are explained in the It's a War Zone Out There chapters.



Once clicked, the main pen view screen is replaced by a blank box with a men" bar across the top. Men" items will be revealed by bringing the mouse to the men" heading, which will produce a drop-down list of commands. These commands will toggle on and off by selecting them with your mouse. The commands available under these menus are as follows:

FILE

New: Brings up a New Experiment dialog box that will clear the current experiment and lets you start a new one. You must choose SAVE if you want any elements of your current experiment saved. You can choose CANCEL to exit this and all other dialog boxes.

Load: Loads a saved experiment or the particulars of experiments through the Load Data dialog box. You will be prompted beforehand by a Save Experiment dialog box if you want to save the current experiment. In the Load Data dialog, choose either Textbook Lab or User Lab, click on the name of the saved experiment, and then click on LOAD to bring it up. Experiment lists are scrollable by clicking the scroll arrows, clicking in the scroll bar, or by clicking and dragging the scroll box.

If you wish to load in Therolds saved from other experiments, click on THEROIDS, then on the Theroid data name, and then on LOAD. Open the Database lab view, and your Theroids can be placed in the pen by clicking in the desired spot with the box cursor that displays the Theroid numbers. See Save below for details on all of the loadable options for saved data.

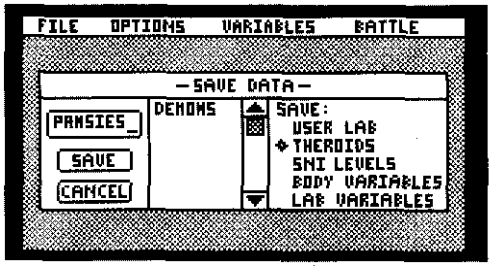
The cautious seldom err.

— Confucius

Save: Saves the current experiment under its current name. If the experiment hasn't been saved, you'll be prompted to enter a name in the blank text box. The Save Data dialog box presented here gives you many save options: selected options have a diamond to their left. If you click on User Lab and then on SAVE, you'll capture the lab as you've built it to that point.

If you click on Theroids, you'll see a blank text box to type in the name of the creature file you wish to save. You can only save Theroids you have grabbed with the Grab command in the lab Database view; otherwise, when you click on SAVE, a message window will inform you that you've got to go do your grabbing. You are restricted to saving 159 grabbed Theroids, which is as many as can be held in the choppers at one time. They are stored there in a state of stasis.

Clicking on SNI Levels and then hitting SAVE will save the current settings for the Synthetic Neural Injector, so that you can call up your favorite Theroid settings to instantly inject creatures for a new experiment. Clicking on the Body or Lab Variables and then choosing SAVE will preserve those detailed genetic and laboratory settings for any new experiments. Any or all of these saved data types can be loaded into a new experiment.



Saving a lab alone will collectively save all of these other options (Theroids, Body Variables, SNI) at the point of their development in the experiment. You could, for example, simply fill a lab with food and differently sized pens and save it as a "template" to build creatures from for several experiments. See the Options menu below for information on the powerful Variables commands.

Save As: Lets you save the current experiment under another name. You'll be prompted to enter a new name for the experiment. The currently open experiment would only reflect changes saved under its original name. This selection will bring up the Save Data dialog described above.

Exit: Exits the experiment and returns you to the desktop menu. You'll be asked whether you wish to save the experiment. Note: your dishware will remain unwashed in the lab-you'll have to take care of that yourself.

Dialog boxes for all of the above commands have a CANCEL button if you change your mind.

OPTIONS

The Options menu lets you customize some of the basics for your experiments. Selected options will have a diamond to their right.

Sounds: Toggles the delightful sound effects of battling beasts and clickable choices on and off. These sounds are dependent upon your computer's sound card for effective operation.

Fast Panel: Toggles between a slower or faster display of the individual module panels in the lab; some computers will have trouble with the rapid redraw, and thus the default should be left untouched. The default panel speed makes them slide into place- with Fast Panel on, they just appear.

Mouse: Toggles mouse control on or off. UnNatural Selection can be operated by use of the keyboard, though it is much easier to use a mouse. See your addendum for details.

The desire for glory clings even to the best men longer than any other passion.

– Tacitus

Voice: Toggles on and off those dulcet feminine tones and announcements that follow command executions and procedures. Sound existence and quality is soundcard dependent.

VARIABLES

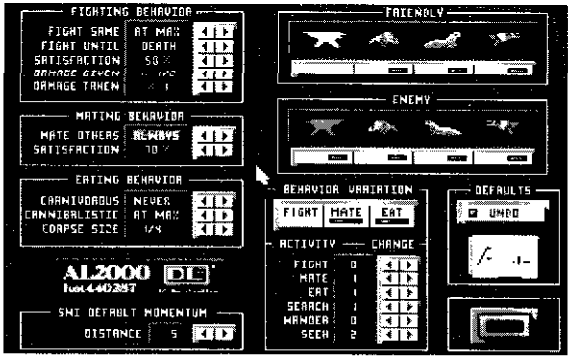
The Variables options provide you with comprehensive settings to fine-tune Theroid behavior at the genetic level, both for Friendly (that's you) and Enemy creatures, and the ability to adjust some laboratory operations. Each island has its own set of body variables for its Theroids stored as part of the island data, but you can override those here and load them through the File menu as part of your island battle encounters.

Offspring of mating encounters between Friendly and Enemy creatures will be aligned in battle according to which of the parents provided the most genes. (Beware-your strongest creatures could mate with enemies and produce ferocious opponents.) Mating between two body types can also result in the birth of a third type if conditions are correct.

BODY VARIABLES

Selecting Body under the Variables option brings up the Behavior Modification Panel, a true carnival of creature comforts and discomforts. This is your body and detail shop, where you more delicately adjust the motivational levels of the broad settings of creature design and conduct-such as Fight, Mate, Eat-that you established in the SNI, but for both enemies and allies, and a number of other options.

These adjustments are global values for all creatures of the selected body type. Changes in Body Variables will affect all creatures of that body type whether they were created before or after the changes. The only exception is SNI Momentum, which is set at the time of injection, and thus will not change the momentum of existing creatures.



Body Variables Panel

The top-right corner of the screen gives you selections for your creatures: Friendly, the good guys. Clicking on any of the four buttons below the Theroid icons highlights and selects Zips, Hulks, Slugs or Beasts. Beasts are creatures that can result through the breeding of animals that have a fight value of 48. a Mate and Eat over 80, and a Speed, Strength and Stamina over 200; any offspring with statistics higher than this will be born a Beast, a creature to be reckoned with. The panel below the Friendly paneldoes the same for Enemy animals. Settings for the Theroids will highlight in the color of each respective creature.

Fighting Behavior

Thetopleft box labeled Fighting Behavior allows adjustments for combat encounters. Click on the left or right arrow buttons to designate choices. Where a numerical figure can be set, you can also enter it with your keyboard.

Fight Same: Controls when a creature will fight enemy creatures of its own body type. Always instructs the creature to fight its type at any encounter. Never will prevent the creature from ever fighting its own body type. (However, if an enemy creature wants to fight it, yours will fight.) At Max programs the creature to fight only if its fight level is at its maximum value.

Fight Until: Programs the battle durations of the Theroids. Death makes the selected creatures fight until one of the combatants dies. Need will make the creature fight until its fight level is lower than either its Mate or Eat level.

Satisfaction: If the creature is instructed to fight until death, the Satisfaction characteristic determines how much of the animal's Fight need will besatisfieduponits winningthefight. For example, a 50% setting means that the creature will have to kill two opponents before its predominant urge to fight will cease. If a creature is programmed to fight only until its need is met, this value is the percentage of need that will be satisfied with each blow the animal gives. Once the Satisfaction level is met, it will start rising again based on its genetics and the settings in the Behavior Variation table. Satisfaction can be set from 0 to 100 percent.

Discipline is the soul of an army. It makes small numbers formidable; procures success to the weak, and esteem to all.

-George Washington

Damage Given: This adjustment regulates how much damage selected creatures will inflict on an opponent's stamina during battle. The attacking animal's strength is multiplied by this variable to attain damage points. The variable can be 1/2, 1, 2 or 4.

Damage Taken: This adjustment determines how much damage selected creatures will suffer when struck in battle. The damage value is subtracted from the creature's stamina; the value can be multiplied by 1/2 or 1.

The strength of the creature striking the blow provides the initial measure of the damage given, which is then modified by the Damage Given value, and modified again by the Damage Taken value of the body type being struck.

Mating Behavior

Mate Others: Controls which other body types this creature will mate with. Adjust mating for Always, Never or only if the selected type is **At Max** level for mating. Creatures of the same body type will always mate each other.

Satisfaction: A percentage determinant for how much of the creature's Mate level is reduced after mating. Zero indicates no satisfaction and 100 total satisfaction.

Eating Behavior

Carnivorous: Determines when a creature will see other body types as food if it is hungry, and when it is allowed to fight that body type according to the Fight Same variable. You can choose Always, Never, or only if its need to eat is **At Max.** If a creature is designated Carnivorous, it will attack another body type for food. These carnivores will still eat lab food as well-they aren't fussy, just hungry.

Cannibalistic: The same functions and choices as Carnivorous, except that it applies to creatures of the same body type.

Corpse *Size:* When the selected creatures die you can have them become None, 1, '2 or 4 pixels of food.

SNI **Default Momentum**

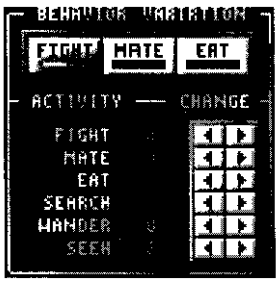
The higher this value, the more the creature tends to walk in long, straight lines, without making significant changes in other directions. The lower the value, the more the creature will be inclined to walk in short lines making sharp changes of direction. The value can range from 0 to 7.

VARIETY IS THE (GENE) SPLICE **OF LIFE**

Below the Friendly and Enemy creature-type choice boxes is the Behavior Variation box, where you can select the activities of your allies and opponents to be adjusted relative to their Fight, Mate, and Eat needs. Click on Fight, Mate or Eat and then fine-tune those broad behaviors by choosing from the list of activities.

In the fields of observation, chance favors only the mind that is prepared.

-Louis Pasteur

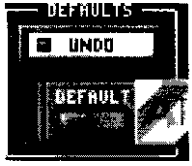


Under Change, click on either the left arrow to decrease the "secondary" trait or the right arrow to increase it. Thus you provide an additional "inclination" to the six possible activities-Fighting, Mating, Eating, Searching, Wandering, and Seeking--of the creature. These selectable activities or broad behaviors are narrowed or opened up, giving more variety to creature actions.

For example, if the Fight behavior variation button was selected, and you added a positive figure to its Eat level, that figure would add to its Fight level when it was eating. It would be more inclined to fight, one of its basic behaviors, while it was engaged in eating. (It would be more hungry for a fight, I suppose.) Conversely, you could make the creature much less inclined to fight when it is eating.

However, these additional values would be subtracted from the creature's stamina if you enhance a behavior by adding to its complementary activity, i.e., you add eating values when the Eat behavior is selected. Remember that increasing a certain trait or need doesn't make the creature perform that action with more ability-it just makes the desire to do that action greater.

A creature with an increased Fight level will need to fight more often than a creature with a lower level, but it won't make it a better fighter. Be careful not to set any self-canceling values, as it is possible to arrange for some activities to increase a behavior level and another decrease it-don't confuse your Theroid's inner child!



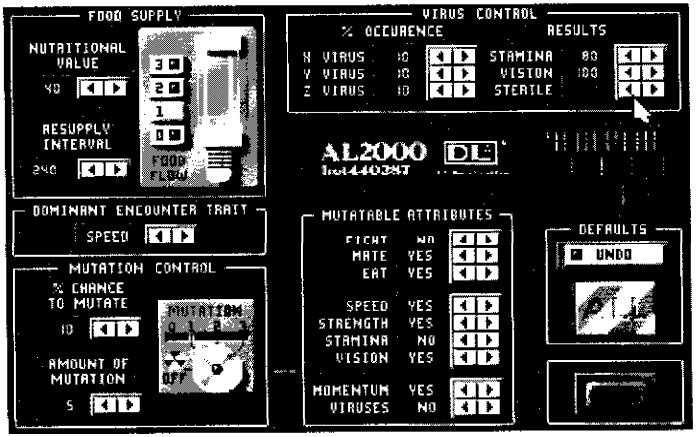
UNDO: DEFAULTS ALL YOURS

Hitting the UNDO button in the screen's lower-right corner will return the currently highlighted entry to its original value. Clicking on the splendidly artistic ALL button will slide away its cover to reveal the DEFAULT button, which, when clicked, will return all values to the game's original default. You can save your Behavior Variation settings using the Save or Save As command under the File menu (accessed throughthe DigiLife's diskdrive), so that you don't have to reset them for every experiment.

Clicking on the EXIT button at the lower-right hand corner will return you to the lab.

LAB VARIABLES: NATURE IS NURTURED

Also under the Variables menu is the Lab command, which when chosen opens the Environment Modification Panel for tampering with Mother Nature. Don't do this to the family pets at home, kids.



Lab Variables Panel

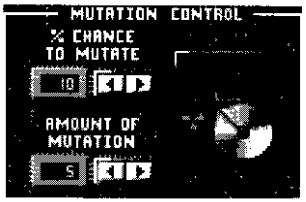
The upper-left of the screen contains the Food Supply controls. Under Nutritional Value, clickingontheleft or right arrowbuttons will decrease or increase the nutrient levels of a pixel of food. This value is subtracted from the creature's Eat level and added to its Stamina level for each pixel of food it eats. The values can range from 0 to 255.

You could possibly sustain a stable population of non-carnivorous Theroids even with very low food values if they breed quickly enough to continually produce offspring, but they might be awfully cranky without their Cheerios.

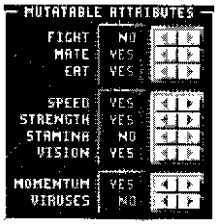
The Resupply Interval instrument is controlled by using the arrow buttons to set how many seconds elapse before each replenishment of the lab's food supply. You can set this for each Food Flow level by clicking on the 1, 2, or 3 buttons next to the Food Flow tube. The 0 tube level will always be off. The time can be set from 0 to 999 seconds.

Below the Food Supply box is the mechanism for changing the Dominant Encounter Trait. This variable determines which of two creatures in an encounter will decide on an action: fight, mate or ignore one another. If you choose Speed, then the faster of the two will make the decision; if you choose Need, then the creature with the highest need to fight, mate or eat will decide what they will do.

MUTATION CONTROL: IT'S GREAT TO MUTATE



The Mutation Control box in the panel's lower-left corner has two devices: the % Chance to Mutate sets the percentage chance on whether a mutation will take place during a birth; the Amount of Mutation sets the percentage change that a mutation will make on a gene's value. If you set this amount to 255, the resulting mutation can be any value-a purely random number. Both of these controls can be set for each level (1,2,3) of the Mutation Dial.



The Mutable Attributes box lets you set with the arrow buttons which of the nine genes will be allowed to mutate, if a mutation can take place. Yes is mutable, No is not mutable. These changes can allow for a wide behavioral range from the original settings for your creatures. Some could evolve better survival mechanisms, some could have trouble tying their shoes.

The Virus Control box at the top-right of the panel has two parts: the% Occurrenceand the Results, bothoperated bytheclickable arrow buttons. The % Occurrence buttons let you set the percent odds that an X, Y, or Z virus will occur in an animal with a virus. Each X, Y, and Z virus can range from 0 to 100 percent-it is possible for one, two or all three viruses to occur in a single creature.

The second device in Virus Control is the Results settings. These adjustable numbers control the percent change a virus will have on its affected attribute. The X virus (which is sexually transmitted) will decrease stamina by this percentage, the Y virus will decrease vision by this percentage and the Z virus will cause sterility in the selected percentage of offspring.

Learn the ABC of science before you try to ascend its summit.

— Ivan Pavlov

DEFAULTS ARE NOT IN OUR STARS, DEAR BRUTUS

The Defaults switches in the Environment Modification Panel operate just like those in the Behavior Modification Panel. Click on UNDO to return a selected value back to its original setting. Click on ALL to slide the button back to reveal the DEFAULT button, which, when clicked will return all settings back to their "factory" specifications. You can click again on ALL to cancel ifyouchicken out. Like the Behavior panel, these changes can be saved to load into new experiments.

Click on EXIT to return to the lab and continue your deviant practices.

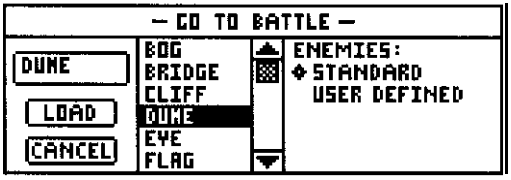
GOING TO BATTLE: IT'S A WAR ZONE OUT THERE!

THE BATTLE MENU

The lab is just half the game, When you think you've bred the most badass Theroids in all creation, use the DigiLife Disk Drive to access the Battle menu.

The Battle menu throws you out of the controlled window of experiment and theory onto the harsh grounds of conflict and combat. From this menu you can select your skill level for the clashes to come. Highlighting Beginner, Normal or Expert will put a selection diamond to the right of your choice.

Beginner will enlist your developing skills against enemies of moderate threat and number, but you have unlimited food, Decoys and Noisemakers. Normal means that you will face foes of equal strength and craft, but your resources are limited. Expert ensures that you will encounter the most heinous of creatures under the most demanding circumstances, with your supplies reduced by one-half of Normal



Once a skill level is established, highlight Pick Island, and a Go To Battle dialog box will appear. On the right side of the Go To Battle box are two choices for Enemies: Standard, which are preset by the game, and User Defined, those that you defined in the Body and Lab Variables panels. Selected options are indicated by a diamond to the left of the choice.

You can scroll through the list of 24 islands by clicking on the scroll arrows, dragging the scroll box or clicking in the scroll bar. Click on the island name to select it (it will appear in the previously blank text box), and then click on LOAD to bring it on-screen. You can't access the Top Secret battle islands from the lab unless you have completed the Top Secret game sequence. Clicking on CANCEL will return you to the Disk Drive menus.

ON THE ISLAND: THE VIEWS OF WAR

The Go To Battle command positions you on an aircraft carrier equipped with the DigiLife in an on-board lab. Theopening screen view is that of an island battleground at the Command level, the level at which you devise astrategic approach, deploy troops and cargo, and try to influence battle encounters. This is the view that you will see after agreeing to go to battle in the Top Secret games, though you have no control over island choices in Top Secret games.

The Command button will have a highlighted box next to it when engaged. The initial Command view employs the SatCam, which when on (its button highlights) allows you to select the destination point on the island for your loaded aircraft. Bringing the cursor into the main view screen with the SatCam on will change it from an arrow into a cross-hair target sight; clicking with the cross-hair cursor will arrange for a landing on the clicked spot on the island. See the chapters below on aircraft deployment.

Command Level, SatCam View

The main view screen displays the selected island by default at Zoom 1; Zoom controls are to the right of the screen, but you must go into the View level to select creatures for one-on-one observation-the Command level only allows Zoom 2 viewing, though you can use the Command's SatBeam to really mess with their lives. The game clock is in the upper-right corner.

It is fatal to enter any war without the will to win it,

-Douglas MacArthur

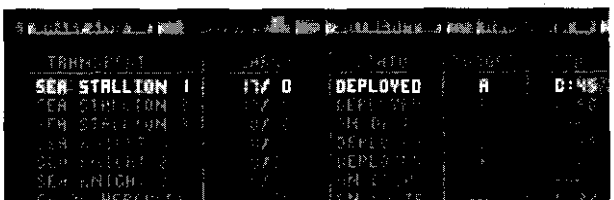
THE 'BRIEFING: GET YOUR BRIEFS ON

Click on the BRIEFING button to get an overview of the island's physical characteristics, including its food supply. The messag bar below the view screen will display a summary of island data Click on the left arrow button at the bar's right to scroll bac through the already displayed message or the right arrow butto to scroll forward. The looping arrow button returns to the star of the message and replays it. The island's population will be blanked-out while in Briefing view.

An island's terrain should be taken into account when breeding creatures. Swampy terrain will slow down creatures with long, narrow legs; rocky terrain will slow down creatures with short, wide legs. Forested areas will remove any advantage strong vision would offer a creature. Some terrain features are deadly: cliffs are fatal if walked on, but better Theroid vision will detect and avoid them; bogs are also lethal, and undetectably so. See the Strategies section for elaboration.

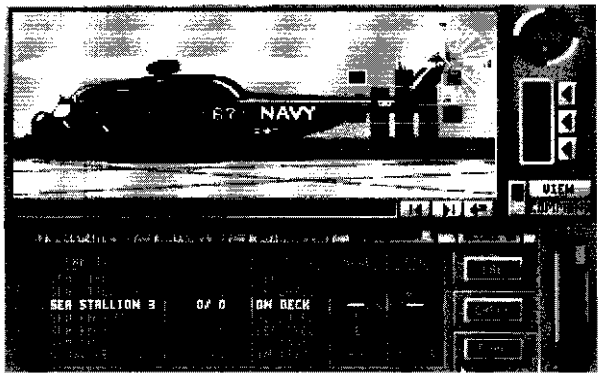
AIRCRAFT

The SatCam view presents you with a list of aircraft in the panel below the main view screen. Under Transport are the names of your crafts, Cargo reveals what the plane is carrying (left side of slash for Theroids, right side for materials), Status, its present operating circumstances, Target, the designated landing spot on the map (seen as a letter on this panel and the island), and ETA,, the arrival time of the craft on the island or back to the carrier deck.



Choppers are loaded by selecting a plane's name and then clicking on AIRCRAFT, which will bring up the image of the selected craft on the main screen. The game clock and actions will halt. to give you strategic breathing room. The selected craft will be indicated by the highlighting of its initials box beneath the aircraft images; other craft available for loading will be indicated byjusttheletters of the initials being highlighted.

You can mix creatures and cargo on the same plane as you see fit, and they will be placed on the island in the same physical arrangement as you see them on the loading screen. The Sea Stallions are helicopters with a 17-unit creature/cargo capacity; the Sea Knights have a 36-unit capacity. The C-130 is a large turboprop with a special function explained later.



The selected copter will have a series of shaded boxes on its right side: one will have a highlight box around it. Those are the cargo spaces of the plane, and they are loaded by clicking on either the LAB or CARGO buttons to the right of the aircraft list.

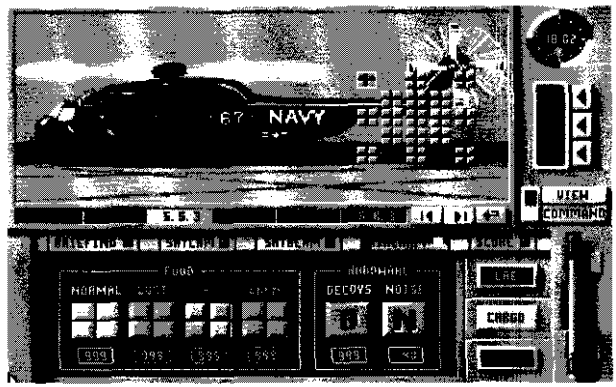
Click on LAB to see the Database display of your Theroids as they were when you last left them-you can sort them and select them using the same Database view procedures. Huge creature totals can result in slow sorts; you can halt a sort at any time by hitting the Escape key or by clicking on either mouse button. The total number of your creatures is under the CLR button.

In war, nothing is impossible, provided you use audacity

— G. S. Patton
(Old Blood and Cuts)

Selecting a Theroid or multiple Theroids will gray them out in the Database list-removing them from the lab-and fill the empty cargo boxes of the aircraft with a colored square displaying an initial indicating creature type: "Z" for Zips, etc. The white highlight box will move to the next empty box. You can rapidly select and transport creatures by clicking in the Database where you want your creature selection to begin and then clicking on the right mouse button, or slightly slower, by clicking and keepingthe mouse button depressed in the list itself.

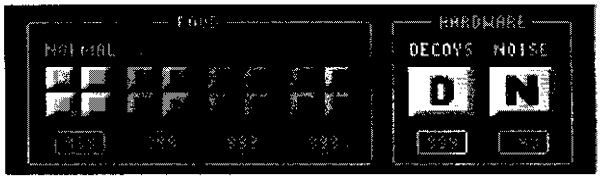
You can rapidly empty a filled plane by clicking on any filled cargo space with the right mouse button, or in a more selective fashion by clicking or clicking and dragging on individual boxes. You can also click on the Database's grayed-out creatures to put them back In the lab and empty the cargo boxes. You can later i-e-sort the Database to bring undeployed creatures to the top of the list.



CARGO

Click on CARGO to arrange materials transport. The Cargo panel presents you with four types of Food and two types of Hardware. Normal food is just your basic monster-sustaining goodie. Lust increases the creature's desire to mate. You can use this strategically if you've sent down Theroids with viruses that you want to introduce into your enemy population, thus producing weaker

enemies more easily defeated by a shipment of your ablest creations.



Rage puts your boys (and girls) in a fightin' mood. If you've developed fighting machines, you can feed them with this to accelerate their anger. Bran is a heinous food trick: it looks and tastes just like regular food, but it has no effect on a creature's Eat level and doesn't increase its Stamina level. Feed it to your enemies.

Remember, you can't control which animals will eat these special foods, so place them carefully. You could accidentally arrange the demise of your fighters by fueling your enemies. The number below each food and cargo icon indicates the limits of placement for each unit of cargo for that island.

The Decoys are Hardware choices that present to your enemies an apparent target or a dressed-up date: use 'em to maximize frustration and minimize enemy stamina. The Decoys can't be distinguished from the real thing, so your enemies will invest their energies on nearby Decoys if they have a peaking urge to fight or mate. Note, though, that your forces aren't any better educated about decoys than the enemy. Once placed, Decoys will last forever.

Noise are noisemakers that repel creatures from theareainwhich they're placed. You can steer creatures from one area to another, perhaps into your best fighter's hands (or jaws or tails), or away from the best food deposits. In Beginner mode, you can have only

Of all the creatures that were made, man is the most detestable. Of the entire brood he is the only one--the solitary one-that possesses malice. That is the basest of all instincts, passions, vice- the most hateful... He is the only creature that inflicts pain for sport, knowing it to be pain.... Also-in all the list he is the only creature that has a nasty mind.

-Mark Twain

40 Noisemakers at one time on an island, but after 10 game minutes, they can be used again. Normal level limits all of your cargo supplies and Expert level cuts those Normal limits in half,

Cargo choices are placed in the planes by clicking on the image of the cargo unit, seen as small images in the cargo boxes. You can rapidly place units by clicking with the right mouse button on the desired cargo, or more slowly, by holding down the Return key after you've clicked on your cargo choice. Clicking once with the right mouse button on the filled boxes or on individual boxes with the left will empty them and return them to the carrier's storage. You can empty them somewhat rapidly by holding down the Return key and dragging the mouse across the cargo boxes. You can click on single, empty boxes anywhere within the cargo hold to strategically place individual pieces of cargo.

After one plane is filled, you can click on any of the lit boxes with the craft's abbreviation on them to fill additional planes, or you can click on the initials of previously filled (undeployed) planes to change their holdings.

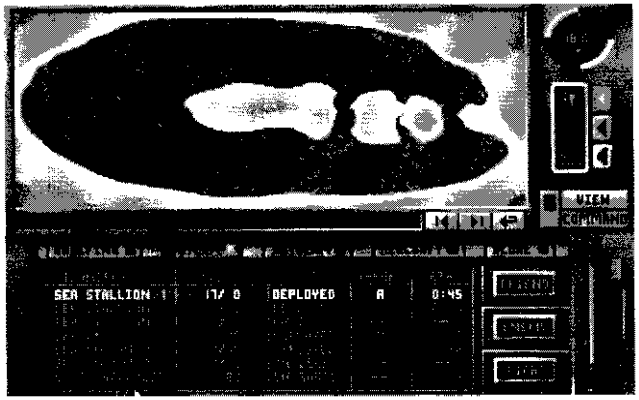
AIRCRAFT DEPLOYMENT: NICE OF YOU TO DROP BY

Aircraft deployment to the island is begun by clicking on the SATCAM button after planes are filled. The Cargo line will display the planes' holdings. Click on the plane you want deployed and its info line will highlight. Move the mouse cursor over to the island spot where you want to drop your surprises--remember that enemy creatures will eat the food, react to its type, and respond to hardware deposits.

Note that moving the cursor over different parts of the island will change the arrival time in the ETA column, dependent on distance from the carrier. Don't drop food in a spot that won't soon have your creatures in it, unless the drop has a plan behind it.

Click on the desired island spot (you can do it in Zoom 1 or 2), and you'llseealetterinthespotyouclickedthatcorrespondswiththe letter seen in the Target column of the aircraft info. The Status column will read "Deployed" for the craft in question, and the ETA

column will show the seconds until landing. Once the deposit is made, "Returning" can be seen in the Status column, with its ETA. You can click back on AIRCRAFT to see the holdings for a deployed plane; a Returning plane will have an empty cargo bay.



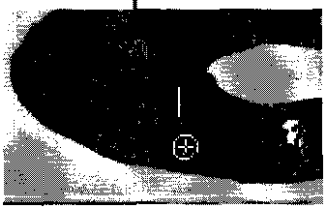
Victory is the beautiful, bright-colored flower. Transport is the stem without which it could never have blossomed.

-Winston Churchill

Note that Noisemakers and Decoys will kill any creatures they land on, and that food dropped into bogs or on cliffs disappears. Also, a larger body type will always kill a smaller body type if it lands on it. Similar body types have a 50/50 chance of survival when dropped on one another.

Once the plane has arrived back on the carrier- "On Deck"–it is available for reloading. You can launch all of your loaded planes from the SatCam view, or you can click back on AIRCRAFT to switch back and forth from load to deployment to reload, depending upon your attack strategy and the course of the battle. (There will be moments when you need food, and all you've got are creature-laden copters and vice versa.)

The C-130 is a supply plane that will dump a specified amount of food whereever you designate. It can deposit 20 parcels of food four times, or all 80 parcels at once, and then it will be resupplied itself back to its SO-parcel capacity. You must be in the SatCam view at Zoom 1 when you click on your island spot; the cursor will have



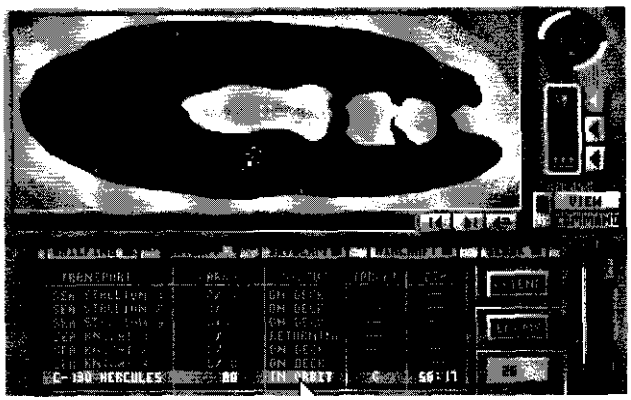
C-130 Food Placement

a white line at its tip that can be stretched from about a quarter of an inch in length to one inch, and angled at 45-degree settings.

The angle establishes the placement of a swath of food and the length of the line establishes the dropvolume: the longer the line, the more parcels dropped, in 20-parcel increments. Click again when you finish your positioning, and the airplane will soon deliver its caloric cargo along that path. You can hit the Escape key if your C-130 drop path isn't to your liking. When the plane's Status line has changed from En Route to In Orbit, you can utilize its storehouse once again. It will rapidly be filled again for those moments when neither fighting nor … uh, *mating,* are paramount: chow time.

BATTLE ENCOUNTERS: FRIENDS, FOES AND BLOWS

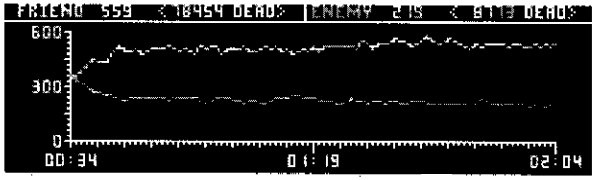
Your new island arrivals can be distinguished by their color differentiation on the island in Zoom 1, and even more clearly in Zoom 2. If you click on the FRIEND button to the right of your aircraft list, the enemy Theroids will be ghosted on the island, while yours will keep their shiny prominence: the constantly updating numbers of your creatures will appear in the FRIEND button. The same situation and info for the bad guys can be seen byclickingon the ENEMY button. Click on the FlGHT button below that to see how many of your lovelies are scufflingwith the uglies. (This number can also include enemies fighting one another.)



Fighting Mad Theroids

CHECKING THE SCORE

Unfortunately, these islands aren't Club Meds, and if you see your creatures rapidly disappearing from the screen, it doesn't mean that they've gone to change into their swimsuits. Clicking on the SCORE button will bring up a graph that charts the results of the engagement to that point. The Friend line will display how many of your warriors are still alive and how many have perished, while the Enemy info registers for their side.



Below that is a chart that graphs these numbers on the vertical axis, while pegging the times at which the numbers changed-battle births and battle deaths-down below. You can switch between tracking the fighting over 1 and 12 hours, 3 hours and 6 hours by clicking on those respective buttons on the right of the graph. The running Battle Time can be seen in the Message Bar below the view screen. See the Strategies chapter if the numbers aren't to your liking.

A HASTY RETREAT

If you sense that some regrouping might be to your advantage, you can bring back some of your undermanned forces by using the Evac command from the Aircraft view. Click on the EVAC button and you will see the sortable Database list of every Friendly on the island, and the selectable initials boxes of your available choppers. Choose an empty craft and select the Theroids you wish to return to the carrier's lab.

You can use strategic sorts to get back your strengths for redeployment. The cargo boxes will fill by the same procedures used when you were getting ready to deploy the troops. You are limited

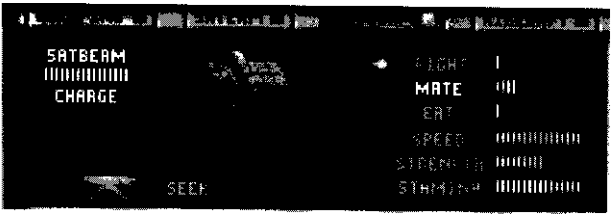
to evacuating 159 Theroids at a time, and you must deploy a number of them before you can then evacuate an equal number more.

Click again on SatCam and you will see the island's map with the selected craft's Status line reading "Deployed." All of your island's creatures will be in stasis, with their NPR shut off. When the craft lands, the selected ones will disappear from the view screen into the chopper's hold and the others will again become active ("Returning" will be seen in the craft's Status line). When the aircraft has returned to the deck, your Theroids are safe and sound back in the lab, ready for a more strategic deployment.

THE SATBEAM: THAT LITTLE EXTRA SOMETHING

The SatBeam command will come in handy if you have dropped a deposit of your finest fighters (or perhaps some of your two-left-footed freaks), and you want to give them-or your enemies-a behavioral boost. Click on the SATBEAM button (in either Zoom 1 or 2) and a panel will appear below the viewing screen with an image of a satellite and a series of lighted bars with the words "Satellite Charge."

To the right of the satellite is a series of needs or traits that can be selected with your mouse; the selected need will have an image of a beam next to it. When the trait is highlighted in white, that indicates what the creature currently needs most. Click on the fiend you want to affect (it will be bracketed) and its current behavioral background will be displayed by the number and color of highlighted bars next to the needs or traits. An icon of your chosen beastie will appear under the satellite icon.



In the Fight, Mate and Eat categories, the white part of the graph shows the maximum potential for that attribute. The colored bars indicate the creature's current level, and a yellow bar at the end means the Theroid is at its limit. Any yellow bars at the ends of those bar graphs indicate that the

creature is "maxed out" for that attribute at that moment: if the yellow bars reach the maximum for Stamina, the selected creature will soon be singing in the angels' choir (that's dead, for those of you unforgiving of metaphor).

To boost a need or trait, select one from the list and click on the FIRE button. You'll see a beam shoot from the satellite picture to the creature picture, and the need/trait bars will display increased energy in the chosen selection. If your creature is mating or fighting, you'll also see his partner's icon. If you know the specifics of your opponent, you can boost your creature's energies in a way to overcome your opponent's strengths. A carefully timed Fight boost will enhance your Theroid's urge to fight, and zapping it with a Strength or Stamina beam during an encounter might help it defeat a stronger enemy.

Of course, like all good science, it doesn't always work the way you planned. The SatBeam can be fired again and again, even with a partial charge, but only if your target is not currently under the influence of a previous SatBeam blast. You can also use it against Dr. Skinner's creations to make them fight amongst themselves, as long as that's how their Body Variables are programmed.

There are some additional options from the SatBeam view. Click on the SCAN button to see the number of your creatures that are under the influence of the SatBeam enhancement: those not affected will be grayed-out. When selected, the N.P.R. button will turn on the control frequency for your animals, putting them in a catatonic state: they won't be attacked in this condition. You can

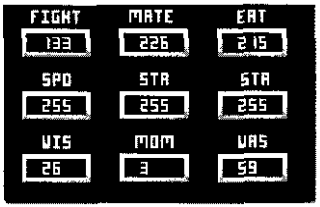
0 God of battles! steel my *soldiers' hearts; possess them not with fear; take from the now the sense of reckoning, if the opposed numbers pluck their hearts from them.*

-Shakespeare

use this to freeze your creatures, stopping enemies from attacking them, and giving you time to study potential stratagems or to provide reinforcements.

THE VIEW LEVEL: LOOK A BIT MORE CLOSELY

The other level available to you from the battlefield is the View level, accessed by clicking on the VIEW button above the COMMAND button. The View panel beneath the main view screen displays the strongest example of individual characteristics (needs and traits) for the entire population of creatures on the island, both Friendly and Enemy, much as it works in the lab.



For example, there might be 2, or 20, or even 200 Theroids on an island that have a Strength attribute value of 129, the present highest strength on the island, and there might be the same number, but different creatures, that have a Speed value of 217. The numbers contained in the boxes reveal how high the value for that attribute has evolved within the population, not the numbers of creatures that are the strongest. These numbers will fluctuate to reflect the ongoing evolution of the animals.

However, when you click on one of the category boxes, the creatures on the island that have this rating will highlight, and those that don't will be ghosted, so you could watch that group over time to see how that trait might affect their survival. You must have those commands that display other highlight values (such as FRIEND, ENEMY, etc.) turned off from the Command level to use these View level buttons.

It is one of the game's intriguing dynamics that creature interactions are not altogether predictable, e.g., fast Theroids will get more hits in during a battle, but that may or may not be enough to defeat a creature that can kill them with one hit. Randomness comes into play as to what the current stamina level is for both creatures; a creature with a high stamina and high strength can be defeated by a creature with low stamina and low strength if their clash occurs when the stamina level is low for the more powerful creature.

The right side of the View level panel displays individual creature behaviors. Use the mouse to select creatures at Zoom 1 and 2 (view in all three), and their fluctuating individual needs will be tracked by the highlighting of the bars next to the characteristic's name. As with the lab View, anytime there is a white bar in the Fight, Mate, and Eat lines, that indicates the maximum potential for that attribute. The body color of a selected creature moving up those bar graphs displays its current level for that need. A yellow bar means that the creature is "maxed out" for that need- it wants that thing in a big way.

Simply Beastly

For the Stamina trait, the yellow bar indicates how much of the creature's stamina is used up. (You might see that after a selected creature has eaten, its yellow bars go down, indicating increased stamina.) If the yellow goes to the end of the bars, your baby is soon to die. The selected creature's icon and current action are revealed on the right of the View panel, as is the image of any Theroidyourselectedcreatureis having some business with. The opponent's traits and levels are indicated by small bars under your selected creature's bar graphs.

So long as the mother, Ignorance, lives, it is not safe for Science, the offspring, to divulge the hidden causes of things.

– Johannes Kepler

BATTLE FILE AND SYSTEM COMMANDS: DISK DRIVING

Many of the file and system-related commands from the battle field component of the game are similar to those found in the lab itself. There are some slight variations when accessed from Top Secret mode. These commands are made available by clicking on thediskdrive buttonorthediskdriveareaonthelower-rightside of the screen. Any items significantly differing from the lab view are elaborated upon.

FILE

Under File, the New command brings up a dialog box with a NEW button to load a new experiment or a new game. Choosing NEW will put you back in the lab at the DigiLife console. CANCEL will return you to the current experiment or game.

Clicking on LOAD will bring up a Save dialog box for the current experiment or game. Choosing YES for unsaved experiments will bring up the Save Experiment or Save Game box, in which you can name your poison in the empty text box or CANCEL out. You can also click on old file names and click on SAVE to replace the old file with the current one. If already saved, you'll see a confirmation box with the old file name and SAVE and CANCEL buttons.

If the game is already saved, choosing SAVE will bring up a dialog with the current file name and the SAVE or CANCEL buttons. Unsaved games will present you with a blank text box in which you can enter a name for the unsaved games. Previously saved games will appear in a scrollable list, and clicking on them and then clicking on SAVE will replace the old file with the new.

Choosing SAVE AS brings up Save Experiment or Save Game dialog box, with a blank text box for typing in the names of newly saved files or that gives you the opportunity to save the current fileunderadifferent name. You can also click on previouslysaved files so that you can save that file under a new name.

Clicking on EXIT brings up the Exit to Menu dialog box, from which you can save the current file, or by choosing EXIT, return to the

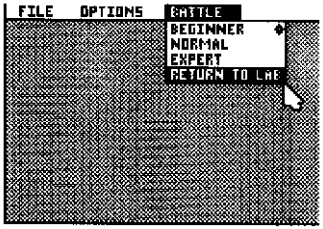
opening desktop to choose a new experiment, new game, or exit to DOS. You can choose CANCEL if none of those suits your fancy.

OPTIONS

The Options menu contains the same choices as those from the pm-battle lab disk drive; they have the same procedures and functions.

BATTLE

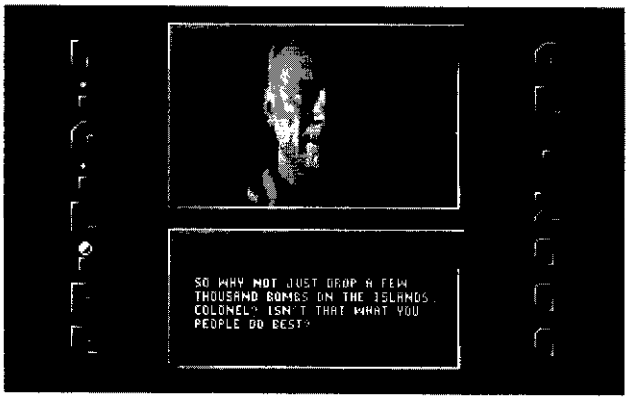
The Battle menu displays the skill level at which you are playing the game ('you must return to the lab to adjust it), and the Return to lab command, which will bring you back to the lab from which you launched your assault. You will be prompted to save the experiment, and be given an opportunity to change your mind about leaving. The lab will display whatever creatures were left over from your island encounters, and you can choose another island challenge therein. The Battle menu is not available in Top Secret games.



CHALLENGES AND LIMITATIONS OF TOP SECRET GAMES

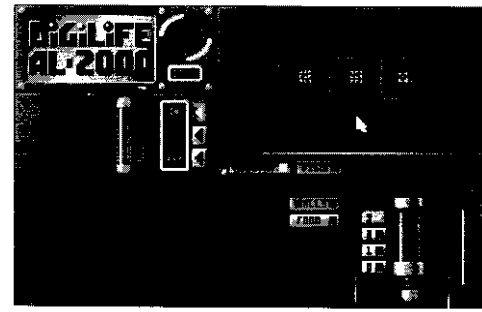
Approaching UnNatural Selection from the lab gives you the leisurely outlook of a scientist with a lifetime government grant: you can design your Theroids ever so carefully, with a pinch of this and a dollop of that, and if it doesn't quite work out, you can return to the lab, where the coffee's always hot.

However if you like your action hotter than your coffee, and you like confronting crusty, authoritarian military figures, the Top Secret game option is just the ticket. You might tire of seeing reruns of the game's opening movie, but you can circumvent it by hitting the Escape key, putting you directly in the carrier's lab.



However, that laboratory begins without the full capabilities of the DigiLife AL2000 in the Independent Research experiments: the Synthetic Neural Injector and the Census and Database modules will be given to you gradually after you noodle around a bit in the Habitat and View levels.

You are given a control grouping of all three Theroid types to begin your business. You'll then have to do some monster breeding while you wait for the additional lab modules. You can speed up the module delivery animations by hitting the Escape key.



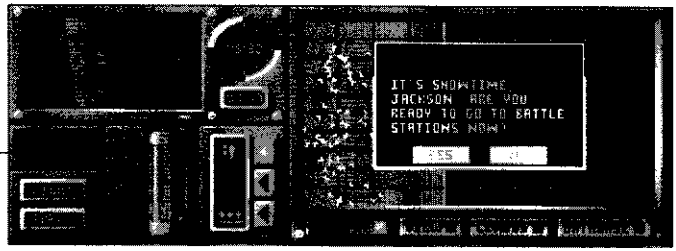
The Missing-Module DigiLife

The Body Variables and Lab Variables panels are not available to you in the Top Secret games-the tables are reset to their default. You can attain many of the same genetic levels by breeding and chance as those of the lab, but there are not mutagens on the islands, so the range and percentage of genetic variations are reduced.

The lab screen displays a bright red Communication (COMM) button when the modules are presented, and also when Colonel Griggs wants to chat about your mounting obligations on the island. Click this button to proceed. The procedures and functions of the SNI and the Habitat, View, Census and Database commands are the same as those from the Independent Research approach.

Once the modules are fully installed, the red COMM button can be clicked at anytime to gain access to the islands, a place you don't want to go unless you've made some monsters with a big kick. If you click on the COMM button, Col. Griggs gives you a chance to back out by clicking NO to his travel plans; clicking on YES will bring you to your first island encounter.

However, choosing No only buys you a little time-you'll soon be forced to play your hand. And not only that, but your delay will set the skill level to Expert mode, with moredifficult opponentsand fewer supplies. The skill level will be reset back to Normal if you get to the next island, but just remember how easily old Grimchops Griggs is annoyed.



COMM Button

And you don't have unlimited capital to back up that hand either. The 900 figure taht is to the left of each creature attribute in the SNI is the total milliliter SNI serum amounts you can use in your monster design for each attribute, and you can only create 500 new creatures total, though of course they can reproduce on the island. (The SNI fluid is resupplied after you win an island.) The 500 figure underneath each creature icon is the serum limits that are "neutral"; they can be used to assign any of the attributes.

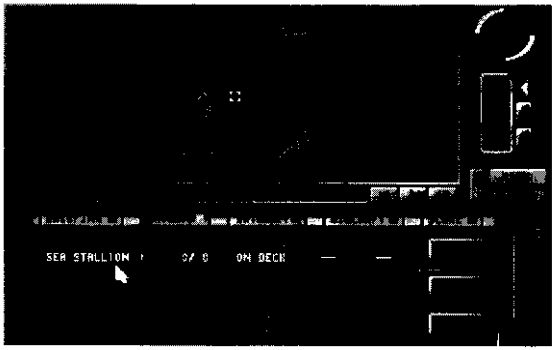
And you cannot return to the lab from an island in the Top Secret games, so make sure that your breeding is topnotch before you put 'em in the field. When you're on **an** island in **battle,** the creatures are frozen in the lab, so they won't be reproducing any more battle-ready comrades.

You will then be delivered to your first combat challenge: Island 1 will be on the main view screen, and you will be at the command level, ready to load and deploy your planes. The commands and procedures for loading and deploying your planes are the same as those of Independent Research experiments, but there are some gameplay differences.

An army marches on its stomach.

-Napoleon

One is that you are limited in your cargo capabilities, depending on the skill level: for Normal, you have only 864 parcels of regular food, 136 each of Lust and Rage, 128 of Bran, 6 Decoys and 2 Noisemakers. These supplies will be replenished at each island encounter. Expert games limit you to one-half of Normal supplies.



Island 1

Since you can't make any leisurely returns to the lab, you've got to either fight *to* the death with your creations and get a loser's Bronxcheer from Colonel Griggs or vanquish Skinner's savages-every one of them-and advance to Island 2. Each island will

present different physical aspects and different Theroid challenges-you cannot rely on a single combat approach to troop and cargo deployment. And those challenges will escalate with each of your victories; your "reward" is a stronger opponent on the next island. Islands 8 and 9 have some particularly fearsome prospects. If you do indeed capture Island 9, you'll be rewarded with ... hah! You'll have to find out for yourself.

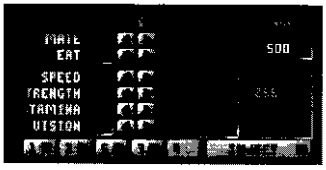
Pay careful attention to the characteristics of your enemies to determine what advantages they may have over you; perhaps they mate often enough to produce superior numbers, with enough fighting ability to withstand most challenges. These major aspects combine with minor ones-how much food they need, their visual skills-and with food availability on the islands and terrain hazards, etc. The Strategies section that follows will turn your potato guns into bazookas--each island is described and then tactics are prescribed. Conquer!

STRATEGIES

The information below will provide you with some tactical approaches to the basics of gameplay, as well as an island-by-island strategic overview. Both User Experiment islands and Top Secret islands are included. You should ignore all of this advice if you want to maximize your challenge and keep your fighting mind pure.

BEGINNING SNI SETTINGS

Keep in mind the basics of body type by SNI: More speed = Zip, more strength = Hulk, more stamina = Slug. Just to create viable creatures in a lab awash with food, you'll need to have a minimum of four or five additional bars of Stamina and one of Mate. This translates into Theroids having enough stamina to find each other and mate before they die. Progeny initially have the original, complete trait assignment, so they will survive about as long as their parents.



Once you add enough bars of Speed or Strength to create a Hulk or Zip, you have only five bars left to play with. These would be best spent on Stamina and Speed or Strength, lettingthe mutation inducer pump up the other variables. With this in mind, some basic starting points for each body type might be:

	Slugs	Zips	Hulks
Fight	1	1	1
Mate	2	2	2
Eat	1	1	1
Speed	1	8	1
Strength	1	1	8
Stamina	15	7	7
Vision	1	1	1

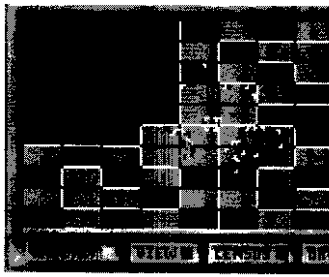
Of course, many conditions, including chance, can interfere with the development of your Theroids. If you're not having much success, experiment with various levels within these boundaries, and check the strategy below on pen construction as well.

BREEDERS VS FIGHTERS

On the whole, it is usually better to create breeders, even Hulks or Beasts, which are set by default on the Body Variables screen not to fight each other. Breeding for fighters is hard and may not be worth it. The creatures tend to battle each other and breed more slowly because of this. Some limited use of fighter breeding can be successful for some island encounters, and it can be interesting besides.

WALL USE A
PEN DESIGN

There are many different styles of wall usage in the lab. You can make a few pens around 16 cells in size; you can make little one-cell pens of the veal-calf variety. One approach would be to take the lab and work it from top to bottom starting with two or three single cells, breaking out into double cells, and then larger. The idea is to breed a few creatures, take a Database, take the cream of the crop, and then set them in the next cell down or over one. You are constantly moving down with the improved breed, and by the time you reach the bottom cells, you might have what you want, or at least a good base.

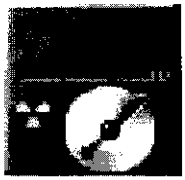


Single cells also give you theoptionofmakingit easy to killoffyour creations by removing their food, or by keeping their numbers down so they are easily wiped out in the Database. One problem you might find out too late is that if you use large pens and get lots of creatures living at once, the computer bogs down and the process is slower. Labs are best kept at just a few hundred creatures, if possible. The exception would be in the game itself, where you immediately want to have a fair number of **critters** around to throw into the jaws of the enemy.

There are other reasons for keeping the pens small, as well. If the creatures have room to wander, chances are reduced that they will mate and thus mutate, and as you know, it's great to mutate. Pen designs are endless--you could even make a maze if it amuses you. Look at the Textbook Experiment section to see some clever and useful pen designs.

Never give in, never
never, never, never,
in nothing, great or
large or petty—never
except to convictions
and good sens
-Winston Ch

MUTATIONS



In the lab, mutations have lots of pros and few cons.

Pros: Any advances you make in the Speed/Strength/Stamina/Vision ara via mutations are a big plus. If you can breed creatures with high Mate potential, they will survive by procreation. It may not seem an elegant way to win over the competition just by overpopulating and pushing them out of the picture, but then-it works. A combination of good Vision and Speed makes for some real screamers, which often do well. Mutation is the way to make Beasts. Mutation is the way to make the best creatures. Convinced?

Cons: Viruses are the number-one mutation to watch out for. Also, you may breed creatures with overwhelming urges to Eat or Fight, when they could probably do better without them. You can only make Beasts via mutation in the game side of the program, and they come at the expense of being creatures that must eat and fight more than the other body types.

THE DATABASE PANEL

The Database panel is an integral part of the program. The Database allows you to go in and cull the best creatures, kill the lesser creatures, and make progress in a positive breeding program-UnNatural Selection, to be sure.

You could design a successful breeding program to eliminate viruses first, every time. Then begin breeding initially for the individual Speed, Strength, and Stamina elevations. Once some creatures have reached a satisfactory level for those traits, cross-breed them to get all three attributes at high levels in one set of creatures. All the other creatures in the lab may be ignored at this point. After this you might try to bring the Mate up, while keeping the Fight and Eat down somewhat. These are sound means that can be improved upon from there.

THE VIEW PANEL

The View commands can give you insight into the enemy. Some islands, such as Wheel Island in Expert mode, have a mixture of creatures, the pattern of which you can discern using the View buttons. On other islands you can use them to determine which enemy troops will be the most difficult, so you might decide to avoid them at first. Or you might take them out first, so they don't improve the overall attributes of lesser enemy creatures.

Something odd often happens on the islands-you meet the enemy and he is you. A mutation can occur where the offspring of your troops and enemy troops are stronger than either and turn out to be not so friendly. This can beanticipated by using the view screen's features. Should you send down your Hulks or your Zips? Which one has greater potential for breeding these enemy mutations? You can think you have nearly won an island, only to see these mutations occur, and be wiped out by them. Using the foresight of the View screen, this might not happen.

HELICOPTER TYPES AND THE c-130

If the C-130 is available, use it for normal food drops. Not only is it faster than any of the helicopters, it also carries more. The normal food available to the choppers should only be used for specialcircumstances, like a shaped drop-pattern, or when the C-130 isn't available. It only drops in 45-degree angles from the starting point, so one must be careful where to begin the drop. It is capable of dropping off cargo in 20-unit allotments, and then hanging around the drop area. For example, you can drop off 20 units in one place, circle around and place more in another spot, or reinforce the original drop, or you can drop all 80 parcels at once. Emptied C-130s are quickly replaced by nearby reinforcements.

The Sea Stallions are much smaller than the Sea Knights, but also much faster. They carry less cargo. The speed of the choppers is also affected by how much cargo they hold. One Stallion carrying a single Theroid will arrive at a given location far quicker than one carrying a full cargo load. Also, it is assumed that the aircraft carrier is off the bottom-right of each island, so drops at the bottom-right take far less time than trips to the far comers of the islands.

With each chopper, your unique placement of cargo in the cargo hold determines how it will appear on the island. Shaped patterns of cargo or troops are necessary on many islands, unless you don't mind wasting some in the rocks or water.

CARGO

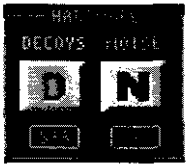
Most islands are designed to be difficult to take by brute force. Supplies can be very handy.

Food-Because the C-130 carries more faster, it is better to use this for all normal food drops. Rage can be dropped among the enemy to make them kill each other, or on your side of the front to make your troops more surly. Lust is best kept among the friendly troops, sometimes interspersed with the troops in a

single chopper drop. Lust is a great way to spur your troops beyond just holdingtheir own turf and breaking loose and gaining ground, and is also a good last-ditch means to keep them all from being killed off.

Keep in mind that Lust and Rage food are nutritious and increase your troops' stamina, as well as having their special effect. Bran is best thrown at the enemy for the purpose of covering up the indigenous food or to blanket where the enemy congregates. It does not increase their stamina, but doesn't affect their need to eat. Tricky stuff.

Decoys-These guys pull triple-duty. They work well as deceptions, getting the attention of any cratures (friendly or unfriendly), luring them to extend their energy uselessly by mating or fighting. They also work well as artificial barriers. Placing one between two nearby rocks will impede creatures from traveling between the rocks. In the same way, a line of Decoys works as a wall. Decoys also make great last-ditch cement bombs. If there are enemy creatures that areparticularlydifficult to kill, just drop a Decoy on them.



There are a number of islands where Decoys are strategically significant, Island 9, for instance, has Skinner's pens that the Tanks have broken out of. By placing the Decoys strategically in the open gaps, you can drop in troops to take on the Tanks trapped in the pen. Decoys are sometimes lost if you drop them into the top of a tree, in swamps or on water. It makes no sense to include a Decoy with a troop drop.

Noisemakers -These can be used to the same effect as Decoys, acting as a temporary wall or barrier. They only last for a while, and this itself should be used as a tactic. If you drop a few Noisemakers such that they create a temporary pen that your troops can conquer and fill, then when the Noisemakers give out, your army is ready to move out of the former pen and do some real damage.

In the same way, if there is only a narrow path through which creatures move, the Noisemakers provide a temporary impedance. When an island is moderately crowded and you have trouble dropping your troops in, drop a Noisemaker to clear a spot, then drop your troops in the clearance.

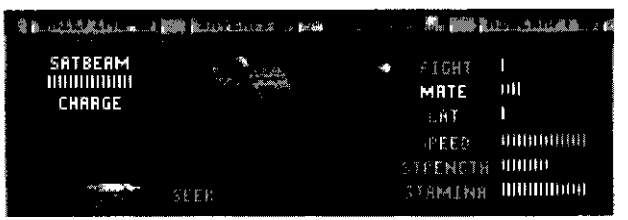
When an area is absolutely packed with creatures, and there's no place to go when the Noisemaker appears, its effect is useless, so caution against that. You can also put a Noisemaker with a drop of troops, so that they will disperse quickly or in a certain direction. However, Noisemakers and Decoys are both best placed before the troops arrive, either to disperse or attract the enemy from an area.

THE SATBEAM

This device may not seem necessary at first, but many times it can be the one thing that determines winning or losing. If your troops aren't doing well, using the SatBeam to give them Stamina or Mate will help them survive. If you want to weaken the enemy, zapping them with Speed or Fight will make them use up their energy moving or fighting amongst each other. When the enemy is not programmed to fight amongst themselves, then zapping them with Fight doesn't do much good, other than making them think of something other than eating or mating, which can help.

The gods are on the side of the stronger.

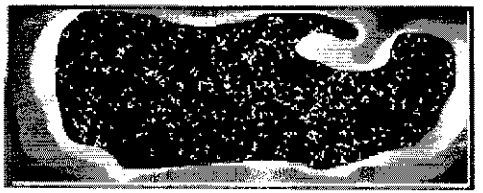
— Tacitus



By pressing the F (fire) key and moving the mouse around to different creatures, the SatBeam can be very effective. One must keep an eye on the Charge level, and not try to repeatedly zap the same creature too often. Island 6 is an example of where the SatBeam can be used very effectively.

Here are some points which may seem unclear unless briefly explained:

Dropping troops on top of objects, terrain, or other troops: If you drop creatures on top of mountains, in canyons, on trees, rocks, in swamps, bogs, rivers, lakes, etc., it may result in their not appearing on the island, because they were killed in the drop. It is wise to be very selective regarding where the troops are dropped, as well as in the shape of the drop pattern.



Watch Your Drops!

When dropping creature on top of creatures, there is a survival hierarchy. Essentially, the bigger, tougher creature survives. The survival ladder is: Tanks, Beasts, Hulks, Slugs, Zips. Dropping Zips on top of Tanks results in high losses. Dropping Beasts on top of Ziprs is like dropping them on a soft cushion. If creatures of equal value are dropped/landed on, there is a 50/50 chance of survival.

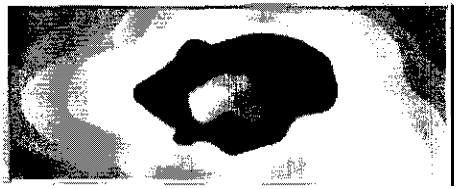
Island terrain features to be dealt with: Cliffs are tricky. If a creature wanders out on a cliff from above, it will disappear (fall and **die).** Creatures with high Vision will see the cliffs and avoid them. Cliffs approached from below are like walls, and the creatures just bump into them. Some objects must be **walked** around, like trees and large rocks.

Bogs and swamps are like cliffs, in that if a creature walks out into them **and** is completely surrounded by muck, it will disappear (sink in and die). Small rocks, soft sand, and slippery ice cause the creatures to slow down as they move. Some creatures are better adapted to movement and survival in different terrains. For instance, Slugs fare better in the swamps.

GAME ISLANDS

The following descriptions are of battle in Normal mode.

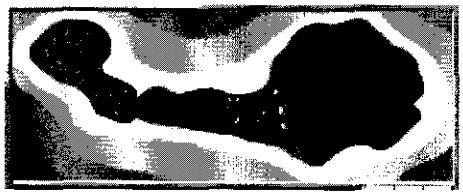
Island l-This is your first island. It is the smallest one you will see, with easy terrain and a weak enemy. This provides your basis for the rest of the island encounters: you find out how well you've done in the lab, creating troops without being battle-tested yourself.



Island l

Tactics: Not much strategy is needed here. If your troops aren't strong enough, or don't multiply fast enough, just make use of all of the weapons and supplies at your disposal. You should be eating cake shortly.

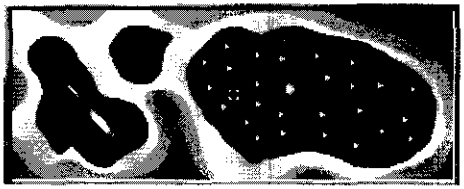
Island 2 — This island is a two-parter. You are introduced to new enemy creature types and different terrain. You are also introduced to a new horror: enemy mutations. Your troops mate with the enemy, and given the right conditions, the resulting offspring are also enemies and greater terrors than either parent! This island is great because it demands a modicum of strategy, and not just your arsenal.



Island 2

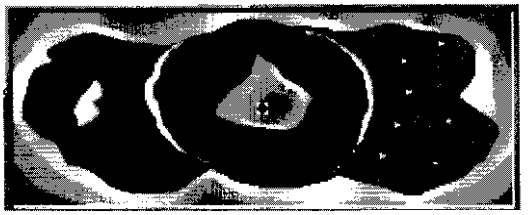
Tactics: If you worked up a successful breeding program, this islandisnot too difficult. If your troops aren't up to thebattle, then you must use Decoys and Noisemakers to keep the Zips out of the uninhabited zone. If they get entrenched there, you will end up using all of your cargo and spend a lot of time figuring out how to utilize the SatBeam.

Island 3 — This island is unique in that it has three different terrain types to deal with. The greatest surprise is seeing a breed of enemy Zips that is much faster and rougher than ever before. This island throws all three enemy creature types at you: Hulks, Slugs, and Zips. Here you must work out successful strategies in order to be competitive.



Island 3

Tactics: Fortunately you have just enough time in the lab to create good warriors. You need them here, lots of them. The enemy Hulk section should be fairly easy, the Slug section moderate, and the Zips are downright tough. Taking the Slugs just takes determination and consistent troop drops. The Zips must be taken by Noisemakers scaring them from their food, and sectioning them off with Decoys. Then weaken them with Bran, and bring in your best troops. Good luck.



Island 4

Island 4 — Here you're thrown for a loop. The shape of the islands adds to the anticipation of beating it. It's fun because it's so deceptive. The small Zip island is hard. Fortunately, if you've gotten to Island 4, you figured out how to beat the Zips on Island 3, and that knowledge is what makes the difference. The large Hulk island looks very different. Drop down your troops and they do well-- for a few minutes. They may be on the verge of taking over, but inevitably the enemy mutates into really tough hombres.

Tactics: Separate the Zips from their food and section them into small groups, using Decoys and Noisemakers. Weaken them (maybe with the SatBeam) and then send in your troops. The Hulk island needs to be taken quickly and decisively. Try to pound them senseless as fast as you can, and don't stop until they are all gone. If the enemy mutation starts, you don't have much time to throw everything you have at them, and the result could be a shameful defeat.

Island 5

Island 5 -You encounter a new type of enemy! Beasts are acreature bigger and tougherthan any you've seen before (unless you had a near-Nobel prize-winning breeding program). The top island isn't hard to take, and makes you feel as if you can handle anything. Then comes reality. If you can beat the Beasts on their own island, you can bask In well-earned military glory. It won't be easy. You must learn at least one new tactic.

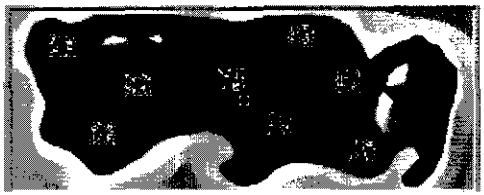
Tactics: Unless you have an endless supply of troops, you need to learn how to do close, shaped troop and cargo deployment, due to the narrow sections of the Beast island, which must be dealt with individually. Take out Hulks last. Immediately after you arrive, section off the Beasts on the narrow portions of the island, and then take each one at a time. You will probably need to use the SatBeam extensively. With that accomplished, next scare the Beasts from their food supply in the middle of the island, using a number of Noisemakers (which you have few of). Then bring in your best troops at the very far left and help them move quickly before the Noisemakers give out.

Island 6 -This unique-looking island appears easier because of the small land mass. It is fun because you enjoy lots of confidence built up from winning Island 5. The terrain tactics are completely new, with all of the battles taking place on the narrow ridge tops of mountains. You are also introduced to the possibility that your choppers can't always place things where you want them.

Island 6

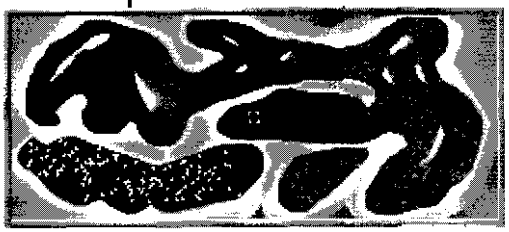
Tactics: First and foremost, you must have troops which have a high Vision rating. If they don't, they'll walk off the ridge tops right into deep ravines. A sound approach is to try to gain a foothold on the left side of the island, just outside of the high wind areas. The key use of Noisemakers and shaped troop drops is essential. You must have strong troops with high Vision and Mate.

Island 7 — This island is great if you have the right troops. For the first time since Island 1, you have broad areas to work with. What is odd are the feeding pens filled with lust-inducing food. This island is a nice lull before the coming storm.



Island 7

Tactics Start at the bottom-right corner with Noise makers and high-level troops to get a foothold, then keep the front moving to the left, with frequent drops of food and fresh troops.

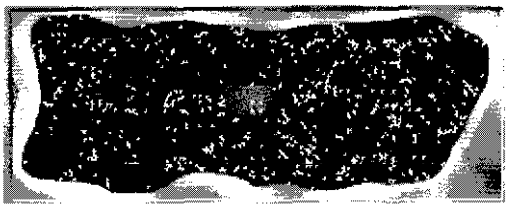


Island 8

Island 8 – The fun to be found in this island is in the challenge. It is by far the hardest so far. You might feel that island 7 wasn't so hard because now you know what you're doing. Wrong! This island uses all terrain types. You also meet the latest enemy type. The Tanks are big and bad, and they don't like you.

Tactics: This island assumes you have really good troops. YOU must use all strategies you've learned up till now, and then some. Immediately drop down Decoys between the Hulks and the Zips. Work the Zip side first-the others can wait, should you get that far. These Zips are as bad as they get. If you don't have good Beasts or really high-level creatures, you may not make it.

Drop Noisemakers to wall off some quiet corner and then eradicate the Zips from your new home. Keep the front well-fed at all times. If you make it past the Zips, the Hulks are slightly easier. The Tanks are tougher than the Zips, but their island isn't quite as difficult. Use Noisemakers to drive them from their food into the swamps, and bring in your best behind them. Move fast.



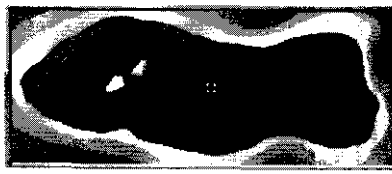
Island 9

Island 9- You did it. If you had any doubts, it's now over. This island looks easier and you now have the best troops. Instead of various creatures to battle, you now have only Tanks. Lots of them. The island terrain is new, filled with broken walls and individual pens. Use Decoys to block certain passage ways, and use Noisemakers to clear landing zones. Beasts or highest-level Hulks are the troops of preference. Keep your guys going with food and fresh troops and don't slack up or the enemy will turn the battle their way.

EXPERIMENTAL ISLANDS

The following descriptions are of battle in Normal mode.

BOG ISLAND

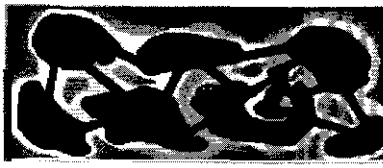


Bog Island

It's tricky. Bog Island is an extremely swampy island with some forested areas. There are some large marshes on the island that appear to be lakes, and three rivers flow from the island's peak. The enemy creatures at areas near the rivers are difficult to beat.

Tactics: Have various types of Theroids ready for this island. Your electronic warfare devices will be useless on most island areas due to the severe terrain.

BRIDGE ISLAND

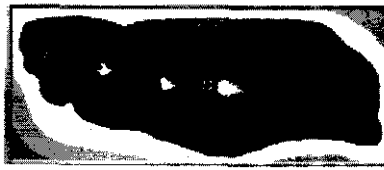


Bridge Island

Average difficulty. Bridge Island is a set of small islands interconnected by numerous bridges. Creature inhabitants on this island are not very difficult to deal with if you can get yours to cross the bridges. Enemy Theroids on this island have a great potential to mate and mutate into stronger or higher-order creatures, so take it quickly, and be careful what type of troops you drop onto this island.

Tactics: The use of Noisemakers is the most effective way to defeat this island. Simply seal off the bridges with the Noisemakers, and your enemies can be taken out quickly and easily with friendly creatures.

CLIFF ISLAND



Cliff Island

Another tricky one. Cliff Island is unique for its steep cliff terrain and its high wind areas. The food on the island is known to cause creatures to become very aggressive and attack each other more ferociously. The central section of the island cannot be approached by aircraft of any type due to the dangerously high winds, and creatures can easily fall off the cliffs if they are either near-sighted or blind.

Tactics: Breed your Creatures for high Vision, Momentum, and Stamina so they have a chance to penetrate the central area of the island. Electronic warfare (Decoys and Noisemakers) seems to be useless on this island due to the cliff terrain.

Cross Island

CROSS ISLAND

Average difficulty. Cross Island is not a very hard island to take if you can employ your tactics correctly. The island is composed of generally flat terrain with four swamps at its comers. The enemy creatures on this island are not hard to beat unless you wait too long before attacking.

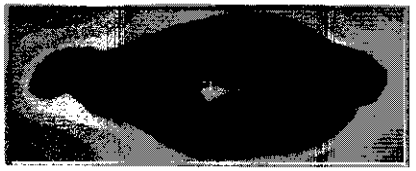
Tactics: The major food-supply areas are right next to the swamps. The best way to defeat this island is to drop Noisemakers in the four food-rich areas, then divide up the island by sealing off the four large flat areas with Decoys. After that, the island should be a piece of cake. Eat it, too.

Dune Island

DUNE ISLAND

Pretty difficult. Dune Island is a sand-covered island, with areas of quicksand scattered throughout. This island is also filled with Beasts, thus making it difficult for both electronic warfare and troop drops. This island is hot, so remember to bring your shades and plenty of suntan lotion.

Tactics: Use Noisemakers to clear out the two horns at the upper right-hand corner of the island so you can drop down your friendly creatures. Keep in mind that since nothing can really annihilate the Tanks in battle, you'll need plenty of creatures with high Stamina and Mate.



Eye Island

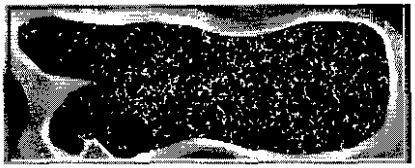
EYE ISLAND

This island is shaped roughly like an evil human eye. (OK, OK, maybe an evil fried egg.) It is very rocky overall, with only one large clearing to drop in a large army. The terrain is steep from the edge of the central mountain all the way to the shore. Troops must deal with rocky terrain and widely spaced food. The enemy Beasts are very rough. This island is fun because it is tough to even gain a beginning foothold.

Tactics: Dropping troops into the clearing usually results in the enemy enjoying a bloodfest. Dropping your troops on the rocks is chancy, but perhaps the best bet. What works well is first dropping in a row of Noisemakers making a small, contained area on the left side, then continually dropping troops that have a high Mate factor. When the Noisemakers give out, you must beready to keep your side of the front well-fed. Decoys and Bran should be dropped into enemy concentrations.

FOREST ISLAND

A rough one, mate. Forest Island is known for its heavily forested terrain. (You might have figured that out, but 1 know you're busy.) Due to its isolation, the edges of the island are surrounded by rocky terrain. This island is inhabited by Tanks, thus making it hazardous to land friendly creatures.

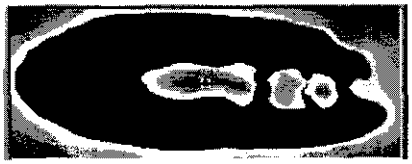


Forest Island

Tactics: Drop a ring of Noisemakers in the forested area near the right side of the island, followed by your friendly creatures. If the friendly creature Mate rate is high enough, they will eventually outbreed the Tanks and take over the island.

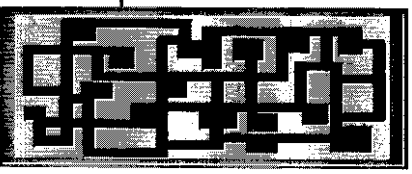
JAWS ISLAND

Like two islands in one. This island is fun to start at one end and work your way to the other, while keeping the Zips at bay. Two-legged creatures are best suited to the considerable amounts of loose sand and forest, which slow down any animals trying to move about. There are medium-strength Beasts occupying the large common zone, and even stronger Zips out on the two lobes.



Jaws Island

Tactics: The indigenous Beasts are hard to take in their region, because helicopter drops in the area result in too many fatalities. The Zips will run over the Beasts in their zeal to dominate the island, so you must attack quickly. It is best to attack the Zips at the end of either lobe and try to establish a strong army, preferably of Hulks or Beasts. Keep a front moving forward using well-placed food. In Expert mode this is one of the hardest islands.



Mole Island

MAZE ISLAND

Even Alexander the Great might have had trouble here. Maze Island is an artificial island created by Dr. Skinner to study Theroid behavior under different terrain styles. Little did she know that she's actually created something that cannot be readily defeated by Dr. Jackson's best mutations. The island consists of numerous tunnels connected by chambers filled with food and enemy Theroids. It has been rumored that there is no possible way to take over the island in Expert mode without extensive, almost overwhelming troop fatalities ... can you do it?

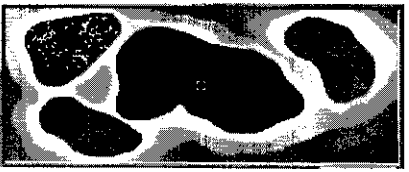
Tactics: The only way is to "divide and conquer," and then out-mate your enemy. Hey, enjoy it; get to know your neighbors,

Race Island

RACE ISLAND

This island is like a racetrack, except there is no clear start and finish. It is fun because of the extreme variety of terrain and creature types, each requiring a different attack tactic. The Expert mode utilizes a "binary bomb" against you (odds are that fairly quickly the different enemy creature types will mutate into rough Beasts that will take over everything).

Tactics: Unless you have Beasts, you really need to try to use your Slugs to take out the enemy Slugs in their swamp, and use Hulks or Zips to combat the other two sections. The terrain extremes make Noisemakers and Decoys hard to land. The best thing to do is attack the Zips first, and establish a foothold. With Expert mode, bring only your best troops.



Rockice Island

ROCKICE ISLAND

Made of four islands, all with rough combinations of terrain-ice, rocks and bogs. This island is unique, with its icy grip lending an eerie feeling to the close-up views of the battle. It is fun to imagine the creatures working carefully across slippery ground while in the midst of mating or fighting.

Tactics: Take each island one at a time., using, Noisemakers and cargo to push teh enemy back long enough to jump in. The Hulk islands look the easiest, but you'll quickly realize they hold hidden challenges,.

ROUND ISLAND

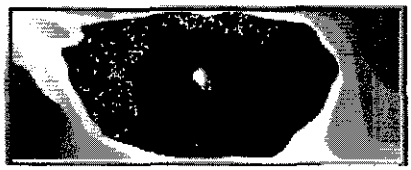
An odd island with very swampy swamps and uninhabitcd highlands. It is fun because the enemy creatures are extremely well suited to the terrain, and you must use more strategy than brute force.

RoundIsland

Tactics: The enemy Slugs are weak, but defend their swamp well. If you can, take the common area between the middle and outer island from the Beasts. Keep your stronghold well-fed, and workagainst the Slugs first. Once they take over the middle island, they are there to stay. Don't worry about the center island. The Beasts will cover the outer island, but weaken them with your cargo, and dazzle 'em with your strategic know-how.

SPIRAL ISLAND

A corkscrew-shaped, medium-sized island with an elevated ramp spiraling up to the central peak. The ramp is bounded by steep cliffs. It is unique in shape and design, and fun in the way the Zips move down the spiral and take over. They are like an unstoppable horde.



Spiral Island

Tactics: You can't attack the Zips up high because of high winds, so stat yourtroops quickly at the base of the spiral and encourage them to move up. The Tanks are tough but the real nightmare is the Zips swooping in from above. In Expert mode this is one of the hardest islands.

SWAMP ISLAND

This large island is very complex, with the rocky north end inhabited by Hulks and the southern half very swampy, heavily infested with Slugs and with lots of lust-inducing food. The most fun is watching the enemy Hulks meet the enemy Slugs in Expert mode. They almost immediately

Swamp Island

breed a new enemy Beast that will take over the island. One problem arises from sending down Hulks or Beasts. They breed with the enemy **and** create an enemy even worse yet.

Tactics: Drop an army in the clear spot on the upper-right, and then an army in the upper-left. Hope the combination of friendly and enemy troops does not mutate past your ability to contain them. In Expert mode, don't expect to win this island the first time.

Wheel Island

WHEEL ISLAND

This island has steep cliffs above rocky canyons. On top is a thick population of Beasts and the canyons are filled with Zips. The joy is the challenge of taking the entire island. You cannot drop off an army and expect them to take over- careful planning is required. Each rocky pen must be attacked.

Tactics: Land an army along the shore, away from the Zips. Using food drops and Noisemakers to channel the Beasts, take the upper area. Once this is done, use Noisemakers one at a time in the Zip pens, followed bytroopdrops. If you try to take the Zip pens first, the Beasts will take you from behind.

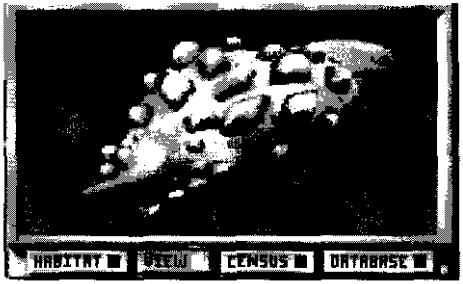
I do not know what I may appear to the world; but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me.

– Isaac Newton

THE WAYS OF A THEROID

As you may have noticed, your Theroids don't always do exactly what you want them to do-sometimes much the opposite. But as you'll see, this is one of the marvelous ***advantages*** of UnNatural Selection. Unpredictability in an experiment can lead to more creative design and more useful information. Unpredictability on the battlefield can lead to ... well, like I said, it's useful in the lab.

Actually, the randomness in creature action is a fascinat-lng factor in their development and evolution. The Theroids have been programmed for a wide range of behavior actions and choices, and within those choices are the possibilities of many new patterns that have a ripple effect through your populations. These are the simulation dynamics: individual and unique creature reactions bring about broad group behavior changes.

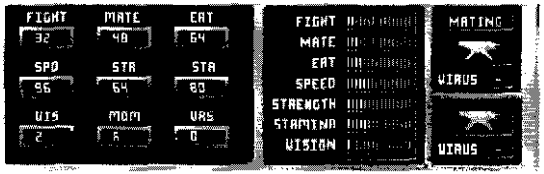


Theroid Romance

For example, consider how the creature's Vision value affects its behavior. The value (seen in the View panel's scan buttons), which can be from 0 to 31, defines the distance in pixels that the creature can see. Zero means that it is blind, 31 that it hasthemost acute vision. Whatever direction the creature is facing, it will look this number of pixels forward and two pixels to the side.

If the Vision routine see-s something like food, a wall or another creature before it looks the maximum number of pixels, it will recognize the viewed object and not look any further. Vision values are also used as the odds (0 to 31) of the creature continuing in a straight direction during Random Move Mode. The higher the Vision, the more likely the creature is to move in long, straight lines as opposed to short, jerky patterns.

There are sub-modes for each of the creatures action modes (Random Move Mode, Search Mode, Seek Mode, Encounter Mode, Grazing Mode, Breeding Mode, Fighting Mode, Dying Mode, Escape from Fight Mode, Grabbed by Player Mode, and Just Born Mode), and all of these modes are affected by the cycling of the



Artificial Life engine, which is factored by the creature's Speed value.

For example, consider the logic behind the Random Move Mode. If the creature's cycle is at a point where an action takes place it will:

Compare its Vision with a random number to see if it should keep going in the same direction, and possibly go into Search Mode, or

See if anything is in its way. If a wall is in its way, then it changes its direction according to a selected spin value.

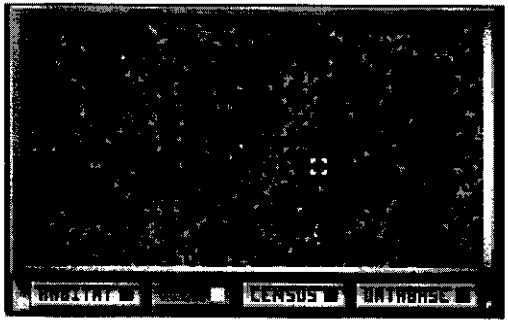
If another creature is in its way, it goes into Encounter Mode.

If food is seen, and the Theroid's highest need is to eat, then it goes into Graze Mode.

If it encounters rocky or swampy terrain, then its next move cycle is adjusted according to body type and terrain type.

If it sees nothing there, then it moves to a new position.

All of the listed behaviors are a single cycle, which then are followed by another cycle and on, until the creature's death. Consider these behaviors in light of hundreds of Theroids interactinginalaboronthe battlefield, and you know these guys don't take cigarette breaks.



A Theroid Reunion

Since each of the creature action modes has these sub-modes, taken together they can result in some fairly complex behaviors. Thus. many of your care fully crafted engineerings can losetheir caboose, so to speak. But as the popular saying goes, you can always make more.

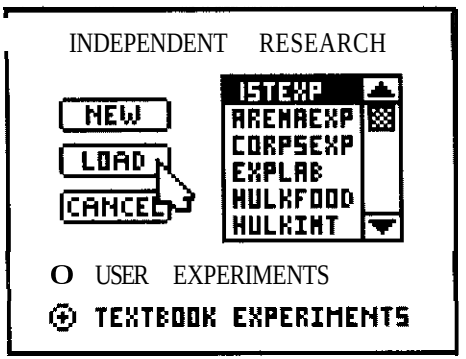
EXPERIMENTS

Science is a first-rate piece of furniture for a man's upper chamber, if he has common sense on the ground floor.

— Oliver Wendell Holmes

EXPERIMENTING WITH ARTIFICIAL LIFE

Beyond the Top Secret games, UnNatural Selection has an Independent Research mode where you can experiment with Artificial Life. To help you get started with your own experiments, a number of "Textbook Experiments" have been prepared and included with the game.



This section of the manual explains each of the 16 experiments in the order they are meant to be tried. (In the game's file-loading dialog boxes, the experiments are listed in alphabetical order.)

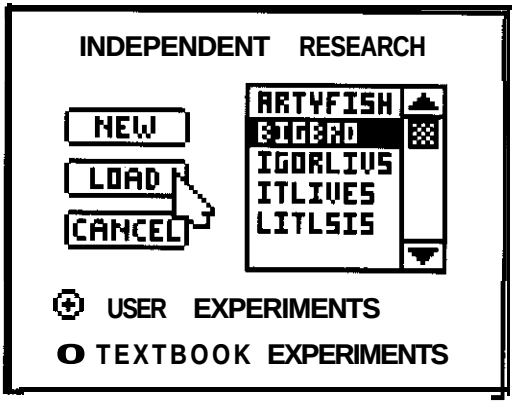
Each experiment has a name that explains what it is about. The file names that the experiments use are in parentheses-some experiments have multiple files.

The instructions in the experiments assume that you have already loaded in the correct experiment files. To load the experiments:

1. Start UnNatural Selection
2. Click on the Independent Research notebook
3. Click on the Textbook Experiments radio button
4. Highlight the filename for the experiment you want to try
5. Click on Load

These experiments have been designed to demonstrate UnNatural Selection's Artificial Life capabilities, and theyrunthegamut from pen design to complex behavioral interplay between Theroids. They are loosely structured, without the formal restrictions of laboratory absolutes and a meticulously maintained lab book. Some of the experiments are "works in progress," labs with predefined characteristics open to expansion and elaboration.

After you've played with these experiments, you'll be ready to design, create and try your own. When you save your own experiments, they can be loaded back in in the same way as the Textbook Experiments, except you'll have to click on the User Experiments radio button.



Note: You may find it helpful to play through the Tutorial before hying these experiments. Also, knowledge of Theroid genetics and behavior--as found in the Reference section- will be very useful.

THE STANDARD LABORATORY SETUP

All of the textbook experiments have the same laboratory setup as their initial starting point. The laboratory values were chosen and selected to provide an interesting configuration for demonstrating experimental techniques. By having one consistent set of lab values throughout a number of experiments, your results and conclusions become part of a larger picture.

This basic setup, called EXPLAB, is provided for your use. You can load it in as your starting point, make your changes, then save it under a different name as your own "User Experiment." While this is a good starting point, it isn't the only one. Feel free to come up with your own lab configurations for your own experiments or series of experiments. Using a lab that differs slightly from the lab used in the game can give you alternate perspectives on Theroids.

Theexperimentsusea "standard" set of Theroids, with these SNI settings:

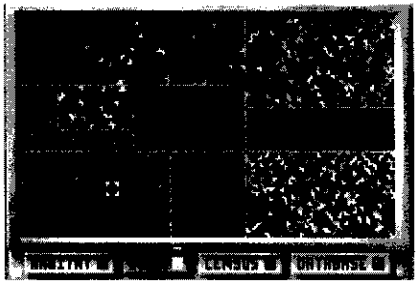
	Fight	Mate	Eat	Speed	Strength	Stamina	Vision	Momentum
Hulk	1	3	3	1	8	6	1	3
Slug	1	3	3	2	2	10	2	1
Zip	1	3	3	8	1	6	1	5

In addition, many settings in both the Body and Lab Variables screens were set and held constant. You can easily view these settings in the Variables screens.

THE EXPERIMENTS

EXPERIMENT 1: OVERVIEW (1 STEXP)

This first experiment provides a sample of the basic experimental setup so you can explore the lab's capabilities and just poke around to see what happens.



1STEXP

A number of breeding pens have been set up to accommodate the three basic Theroid types. In addition, a few smaller pens house virus-infected specimens. Take a look around and get a feel for the place first, then turn the NPR on and observe Theroid behavior.

Try the Fight and Mate buttons to see the frequency of interactions. Switch to the View module and locate high trait-level Theroids by pressing the various buttons, or click on an individual and observe its behavior. Check out the Census module to see changes in population.

Next, try altering the situation. Start your own batch of Zips in the center pen by transporting the ones from the SNI in the Habitat module. Alter the level of food flow, remove sections of wall or blocks of food. Raise mutation levels. Switch to the Database module and grab creatures and either transport or kill them.

The best way to get a sense of control is to try on change, observe the effects, draw conclusions, then try other changes based on your conclusions. Developing populations is an ongoing process of asking questions, observing changes and getting feedback, then making further adjustments. With this process of trial and error, you are engaging in the scientific method.

EXPERIMENT 2: INTRODUCTION TO THEROID BODY TYPES (HULKINT, SLUGINT, ZIPINT)

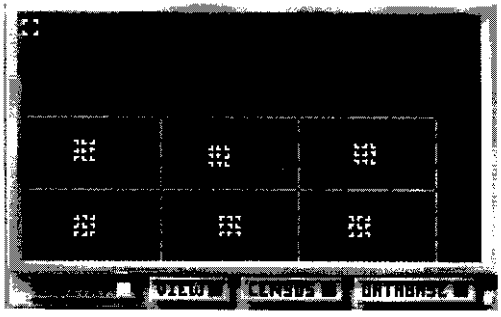
The three basic Theroid types are differentiated by three basic traits:

- Zips have high Speed settings
- Hulks have high Strength settings
- Slugs have high Stamina scores

The other main trait, Vision, does not define Theroid type, nor do the three drives: Fight, Mate, and Eat. All these attributes do, however, influence activity levels and behavior.

These seven traits and drives are somewhat controllable by the experimenter with SNI injections. Also, mutation and selection will influence the scores. The lab View and Database modules are useful for tracking the evolving values of these trait scores.

There are also several defining attributes which can only be examined in the Body Variables screen. These attributes do not mutate and cannot be controlled or influenced by the experimenter during an experiment. The one exception is the trait Momentum, which will vary in laboratory conditions, though it is not subject to influence by SNI injections.



HULKINT

The three experiment files-HULKINT, SLUGINT and ZIPINT-introduce the basic Theroid types, and explore the relationship between drive and trait in creature survival. All three are identical except for Theroid type. Food is set at two and mutation is zero. There are six pens with nine creatures in each pen. Each pen has a different combination of traits and drives. (Theroids in each of the two rows have similar traits and those in each of the columns have similar drives.)

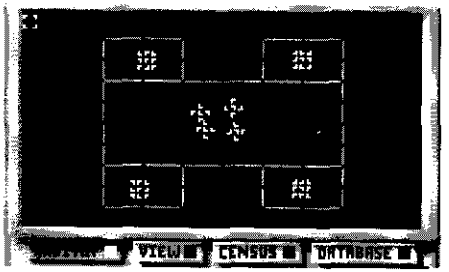
Load one of the files, turn on max NPR for 10 minutes of gametime, then click on Database, which is preset to Graph. Click through the various trait buttons to examine the population over time. Note that in some pens the Theroids have died off while in others the population has prospered. Experimental results should show populations to be more sensitive to variations in drive than in other traits (with the exception of Stamina).

Further tests could be run by adjusting the food level by one and turning on Max NPR for a further 10 minutes. Or rerun the experiment with different food levels at the start. Several general questions can be posed. Does food level alter the survival rate of different populations? If any drive is to be emphasized, which would be the best one? Is there a drive that should always be lower than the other two? Are high drive scores better for creature survival than low scores? How crucial is the Stamina trait?

EXPERIMENT 3: EVOLUTION IN ACTION (HULKSNI, SLUGSNI, ZIPSNI)

Charles Darwin's theory of evolution has often been reduced to the phrase "survival of the fittest." The process of evolutionary change results from a selection of dominant traits passing from one generation to the next. This sequence can be demonstrated in the UnNatural Selection lab.

Three identical files have been set up to demonstrate the selection process in each of the three Theroid types. The object of this experiment is to mix Theroids with different traits and observe which traits are emphasized. If evolution works here, not all traits will be evenly shared, as some traits will dominate others.



HULKSNI

Each of the three labs is set up with five pens. There are four small pens, each with Theroids differing slightly in traits and drives from the Theroids in other small pens. These are the control populations and will remain "pure" throughout the experiment. In the central, larger pen, five of each type of Theroid (20 total) are assembled and mixed, allowing interbreeding. Food level is set at three. There is no mutation.

Turn NPR on Max, let it run for five game minutes, then turn NPR off. Look at the View module. Click on the buttons indicating max traits. Some traits have only a few representatives, while other traits are spread throughout the central population. You will also be able to see the original parents in the small pens.

"Survival of the fittest" can be defined as:

1. A quantity of creatures exhibiting the trait score, or
2. A distribution of trait scores throughout the population.

Are some traits more "fit" than others? Are they the same traits for different creature types? Try continuing the experiment for another five minutes at food levels of two or one. Does this influence trait dominance?

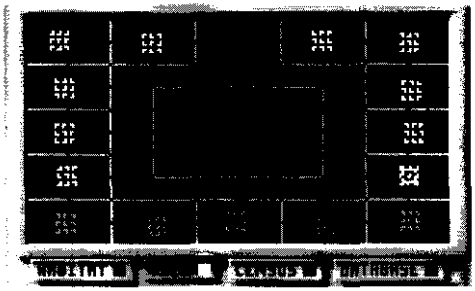
EXPERIMENT 4: DOMINANCE WITHIN CONTESTED TERRITORY (ARENAEXP)

One of the primary goals in UnNatural Selection is to create an army of Theroids capable of killing off all competition in a given area. This can be accomplished through variety of stratagems.

Raw fighting power is one avenue of Theroid mastery. Another way for Theroids to dominate is for one group to populate an area quicker and with greater density than its opponent, driving them out of living space. In situations involving food or space restrictions, certain Theroid types exploit such marginal habitats better than others, thereby winning through efficiency. Furthermore, highlydeveloped traitslikespeed, momentum and vision can give an edge in exploring and colonizing new territory faster than the competition.

There are many possible combinations of Theroid traits, each offering potential advantages and disadvantages in the struggle for survival. The best way to determine what works in a given circumstance is to pit Theroid types against each other in a battle to the death.

In this experiment, 15 pens house Theroids with a wide variety of trait values and capabilities. All of the Theroids have been pre-set to encounter other Theroid types with the utmost in merciless aggression. The body variables Fight Same and Mate Others have been set to Never. Therefore, none of the three types will interact with the others except to fight.



ARENAEXP

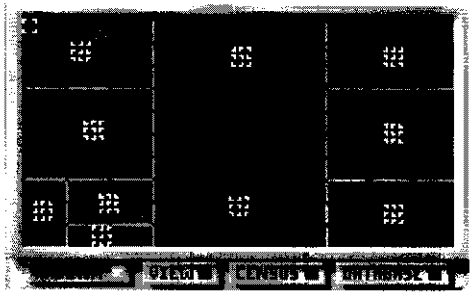
Grab 10 Theroids each of two or more types and set them into opposite corners of the open pen area in the center of the lab. Be sure to match different Theroid types, such as Zips vs. Hulks. If similar types are matched they will mix, share traits and form a stable population. Turn NPR on and observe the results. Feel free to alter food levels and distribution, or wall configuration to taste.

For additional testing, try using mutation at various settings. And as an alternative to grabbing creatures and transporting them to the area, open walls and form tunnels from pen to the combat zone. Creating an elaborate labyrinth inside the arena can be an interesting diversion. Finally, don't forget the Body and Lab Variables. Altering Momentum, Food Resupply, Fight and Mate satisfaction and the Damage Given/Taken scores will affect the outcome of the battles.

EXPERIMENT 5: THE INFLUENCE OF WALLS ON FOOD SUPPLY AND POPULATIONS (HULKFOOD, SLUGFOOD, ZIPFOOD)

All Theroids need living space, territory and food to exist. How they react to environmental pressures and opportunities determines how successful they will be in that environment. In the lab, the experimenter is provided with food and wall controls that enable the creation of a variety of environmental circumstances. The various Theroid types havedifferent needs and requirements which you can exploit to create optimal or difficult living conditions.

Three experiments have been prepared to explore the relationship between food and territory on populations. All three experiments are identical except for the Theroid type.



HULKFOOD

The labs are set up with nine pens of various sizes and with a variety of food availability. Each pen has nine Theroids of identical traits, except for the large central pen, which has nine Theroids at either end. Food is set at three. No mutation.

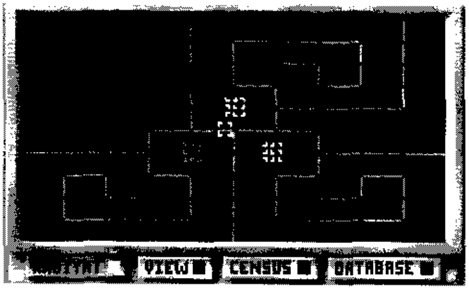
Turn on NPR and run for 10 game minutes: observe the results. Some pens will be overcrowded, while some pens will be empty. Sometimes Theroids are evenly spread over the area, in other situations they are clustered. Differing results may be expected for each Theroid type. As might be predicted, food availability and pen configuration are good tools for population control.

A possible follow-up experiment is to let the game run for a further l0 minutes at food level two, then try food level one for l0 minutes.

Which Theroid type best exploited the large central pen? Why? Which type had the highest overall population at the end? The lowest? What effects did lowering the food level have on creatures?

EXPERIMENT 6: ARE THEROIDS INTELLIGENT? (INTMAZE)

Upon cursory observation, it would appear that Theroids could be called anything but intelligent. But upon closer examination (and with liberal use of operational definitions), it does appear that certain elements combine to produce some Theroids that are, if nothing else, more intelligent than others.



INTMAZE

Intelligence here is defined by specific laboratory results, namely the ability of a Theroid type to reach the end of a maze faster than other types. There appear to be three main traits that influence maze running ability: Speed, Vision and Momentum, so it is a combination of these factors that defines Theroid intelligence. Since Zips have higher Speed and Momentum than others, they tend to excel in maze running. This leads us to conclude that Zips are the most intelligent creature type.

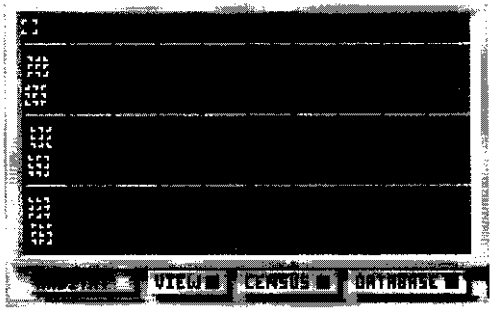
The following experiment has been set up as a kind of IQ test for Theroids. Simply turn on the NPR and watch the race. A typical standard finishing time is twenty-four game minutes. Feel free to alter the Zip profile in the SNI, specifically by adding more Vision to its values. Also, try altering Momentum numbers in the Body Variables. By maximizing these scores, a Zip world record was tentatively established. With Vision at 16 and Momentum at 7, Zips ran the maze in about nine minutes.

An interesting variation would be to run only one creature in the race. Kill off all other creatures by turning NPR on and setting food level to zero. Then put in your “champion” and see if it can complete the race.

EXPERIMENT 7: THE IMPORTANCE OF VISION IN EXPLORING AND EXPLOITING AN ENVIRONMENT (VISNEXP)

The ability of any group of animals to survive in the wild depends in part on that group's ability to forage for food and to seek out potential mates. Theroids have only one sensory apparatus-vision. Therefore it seems only logical that creatures with a high level of vision will be better able to find new sources of food, new areas to colonize and more creatures to mate with. High vision would seem even more advantageous in areas with scattered food resources, or when competition for resources is intense. The VISNEXP experiment explores this relationship between vision and survival.

Three batches of Zips (18 per batch) are set in separate but identical pens. The top group has low Vision(l), the middle group has medium Vision(S), andthebottomgrouphas high Vision (16). All other traits are identical in the three groups. Food supply is set at two and there is no mutation.



VISNEXP

Thegameclockstartsat 12:10. Turn on Max NPR, let the experiment run until 12:20, then click on Database and tally the three Vision groups. (Note that the Database is preset to sort by highest Vision.)

Typical results show a gradient of population scores, with high Vision containing 50% of the overall population, medium Vision composing about 30% of the total, and low Vision rarely getting past 20%. Also, observation shows the high-vision Zips to consistently reach the right-hand side of the pen first and have a sizable colony there by the end of the experiment.

Further experiments could be run using an altered version of the VISNEXP setup. For example, what would happen if the food supply was at level three to start the experiment? Or at level one? If mutation is used, will Vision levels evolve higher? A very interesting follow-up experiment is to open all walls separating the Theroids at 12:20. Would the same gradient of Vision levels be present at 12:30 as there was at 12:20? Or would evolutionary selection favor high-vision?

EXPERIMENT 8: SOCIAL ISOLATION AND LONGEVITY (LONEREXP)

Theroids are generally found in groups. Indeed, they are often found massed together, their population controlled only by sturdy walls. It is seldom that a small group of Theroids exists as a stable population. Small groups tend to either grow into large groups or die off completely. It is therefore surprising that one creature, cut off from others of its kind, can live a longer life alone than it ever could as part of a group. But the phenomenon is not universal- not every Theroid thrives when alone.

LONEREXP.

This experiment attempts to formulate some generalizations regarding the isolated Theroid. Twenty-four Theroids with a broad sampling of traits and drives have been segregated, one to a pen.

First, use the View screen to examine the Theroids and record their various traits and drives. Then, turn on the NPR and record your observations.

Compare the traits of the Theroids that lived with those that died. Notice any similarities? What determines which Theroids thrive when alone, and which die when alone? Our observations have yielded the following conclusions:

1. Theroid drive scores (Fight, Mate, Eat) are more critical than other scores in determining solitary livelihood.

2. Theroids with high Mate scores (relative to other drives) will die off sooner than other types.

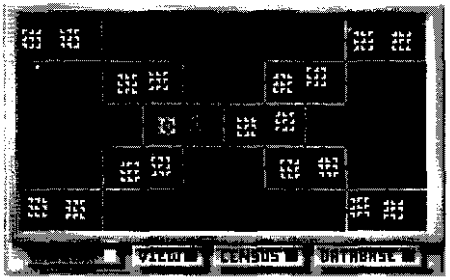
3. Theroids with high Eat scores (again, relative) will live happily apparently forever.

Theroids with high Mate scores will, when isolated, pine away and die for lack of love. They stop eating and seemingly lose the will to live. On the other hand, those with higher Eat traits have no trouble adapting to a life of eternal solitude. Their lives go on and on. As long as their primary need is met (food) they will live forever, caring nothing for companionship. A happy creature is a selfish creature. You may pen as many odes to highcalorie solitude as you please if you have any leftover scratch paper.

EXPERIMENT 9: THE EFFECTS OF RELATIVE MATE DRIVE SCORES ON BEHAVIOR (HULKLOVE, SLUGLOVE, ZIPLOVE)

It seems logical that Theroids should take care of individual needs first (e.g., those having a relatively high Eat drive) before seeking to reproduce. After all, if a creature doesn't live long enough to reproduce, the population won't survive. Still, there may be circumstances where creatures with high Mate drives would quickly populate an environment and overwhelm the competition with sheer numbers.

Under what circumstances is it desirable to have Theroids with a higher Mate drive relative to other drives (Fight, Eat)? Is it better for Theroids to have all drive scores close to each other, equal, or with one drive strongly emphasized? What about mating between the different types? Is it desirable for Slugs to mate with Zips as readily as they mate with other Slugs? This experiment addresses the relationships between various drive levels, different types, and overall mating behavior.



HULKLOVE

Each of these three mating experiments is laid out in similar fashion, with eight variations of one Theroid type, placed in separate pens. In addition, "standard" examples of the other two types are provided for use in "Mate Other" tests. Plenty of open space has been preserved to set up connecting tunnels between pens, or to use for expanded pen structures.

First, examine the various Theroids by using the View screen. They have a variety of trait scores that will provide a broad spectrum of sample behavioral types. Pick out individuals for study. Run the experiment for 10 game minutes, then record your observations. Did some populations die off? Did some thrive? Why?

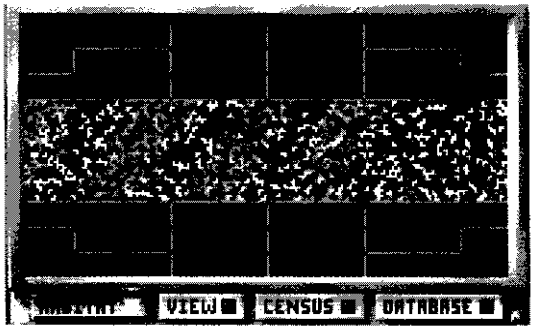
Trytheexperiment under a variety of food layouts andlevels. Can Theroids with high Mate scores survive when food becomes a priority? Try adjusting Body Variables, especially Mating Behavior. Mating Satisfaction percentage is also interesting to alter. So is the Mate Others variable, but only when two different creature types are intermixing. Try setting Fight Same to Never for a look at how a non-mating variable might affect mating behavior.

EXPERIMENT 10: MUTATION AND SELECTION VS. MUTATION ALONE (HULKMUTE, SLUGMUTE, ZIPMUTE)

How big of a part does selection play in Theroid evolution? Is the combination of selection and mutation a better way to evolve an Theroid than just mutation?

With the Mutation Dial set at level one, two or three, creatures are bombarded with levels of radioactivity. This radiation can, at the moment of birth, give rise to trait levels beyond those of the parents. Without radiation-induced mutation, offspring can share in the traits of the parents, but they can never go beyond parental limitations.

There are risks, however. Deadly viruses (sexually transmitted genetic aberrations) can destroy Theroid populations in radioactive environments. Only by carefully monitoring populations during radioactive bombardment is an experimenter able to intervene in time to stop the viruses from reaching epidemic proportions. This is where selection comes in-select and preserve those Theroids that are healthy, and remove the diseased ones.



HULKMUTE

Once a population has a healthy variety of trait scores, the experimenter can once again select and grab desired specimens for breeding.

To give you a yardstick by which to measure your results, we ran experiments with mutation only-no selection-to create a set of baseline figures to compare with. The following results were recorded: Mutation set at l-15% trait increase. Mutation set at 2--up to 50% trait increase. Mutation set at 3-125% trait increase. (Viruses typically do not affect more than 25-30% of the population.) With these baseline figures established for mutation only, practice your own "un-natural selection" to see if the combination of mutation and selection improves on the baseline figures?

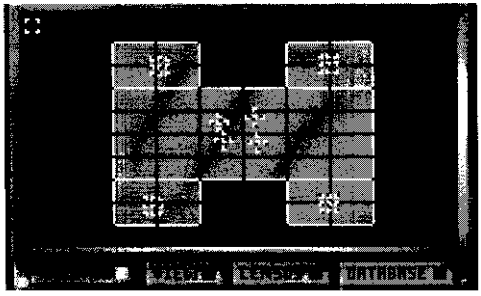
Before starting the experiment, look at the View screen and record the starting trait scores for the creatures. Run the experiment for 5-10 game minutes at mutation level one. Turn off NPR. At the View screen, select a ttrait that shows a higher value than the starting number. Note that the screen will highlight only those Theroids displaying that trait level. Then go to the Database screen and grab the highlighted creatures. Move them into a separate pen.

Run the experiment for another five minutes and repeat the selection process. After 20 minutes of game time, compare your results to the baseline figures. Did your selection techniques improve Theroid evolution?

EXPERIMENT 11: DRIVE NEED AND BODY SPEED IN ENCOUNTER BEHAVIOR (NEEDLAB)

Theroids possess limited potential for social interaction. When one Theroid encounters another, there are only three possible reactions: they will either fight, mate or ignore each other. Considwing this limited repertoire of behavior, what determines a creature's actions? If creatures have similar drive needs (sup pose, for example, both want to mate), then the outcome of the encounter is never in doubt.

But when two creatures have different drive needs (one wants to fight, the other wants to mate), then what happens? There are two good possible answers to this question. One is that Theroids with higher Speed impose their need on slower creatures. The other is that Theroid encounters are determined by the one with the most intense need, therefore drives strength determines behavior. The issues surrounding the debate of "need" versus "speed" can be recreated in the laboratory.



NEEDLAB

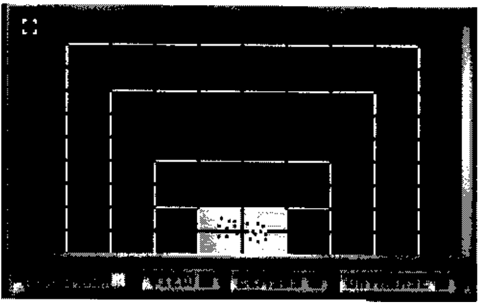
The experiment is set up with three standard populations of Theroids in separate pens. To start the experiment, open all walls and turn NPR to Max for 10 minutes. Look at Census and Graph figures. Record results. Zips should be the most numerous creature, because Zips exploit open areas quickly with their high speed, and are thus able to dominate much of the lab area. Note that if Lab Variables are accessed, creature encounters are determined by Need.

Run the experiment again to contrast results. This time, go to Lab Variables and change creature encounter from Need to Speed. Proceed as before by opening all walls and turning NPR to Max. After 10 minutes look at Census and Graph data. Zips now dominate the overall population to a significantly greater extent than in the previous run.

With their greater speed, Zips can exploit the open environment better than the Hulks or Slugs. When encounters are determined by speed, this gives the Zips even greater control in a survival situation.

EXPERIMENT 12: PUSHING THE LIMITS (NEVEREAT)

Just how flexible is the DigiLife Artificial Life laboratory? Is it capable of breaking the laws of physics? Check out just how powerful (and strange) the Body and Lab Variables settings are, and try to create Theroids that can live, reproduce and die without ever eating.



NEVEREAT

Do Theroids need to eat? Can all of their electro-biological cycles and functions be carried out by a Theroid that never eats in its entire life? Though we're not able to circumvent the Eat drive entirely, circumstances can be created in which a healthy population of creatures lives and dies without ever tasting food. Initial data shows that Slugs (because of their high Stamina) with Mate to Eat drive ratios of 2:1 can be induced to live without ever satisfying their hunger. All other creature life functions remain intact. Creatures Wander, Seek, Search, Fight, and Mate (especially Mate) but are never given food from birth to grave. Oh, never to have tasted garlic ice cream!

Note that the lab is fully set up and ready to begin. Creatures are set up in the SNI and more are available. Simply turn NPR to Max and add creatures. Let creatures fill the entire starting section (85100 should do it), then turn off the food. Will the creatures live?

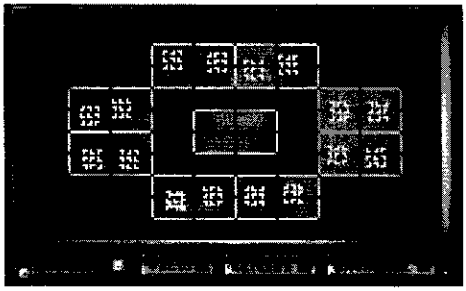
Try to keep the population expanding, eventually covering the entire lab. It may be possible to achieve this result without ever using food beyond the initial startup supply. However, feel free to use extra creatures or temporary food additions to keep the population high, especially just after opening walls.

EXPERIMENT 13: DRIVE LEVELS AND FIGHTING BEHAVIORS (HULKWAR, SLUGWAR, ZIPWAR)

That environmental conditions play a significant role in the health of Theroid populations is obvious. But the internal motivations and drives of the creatures play a potentially greater and certainly more immediate part in determining survival. Of the three creature drives (Fight, Mate and Eat), it is perhaps the Fight drive that is the most difficult to balance and regulate.

To build an army of creatures capable of dominating islands held by enemy creatures, the experimenter faces conflicting needs. On the one hand, if a given population has members that never fight, it ensures that energy is not wasted on anything but survival and reproduction. But on the other hand, an aggressive drive is desirable when faced with a hostile population.

These experiments are designed to examine the advantages and disadvantages of various drive trait scores and fighting behavior variables. Eight pens contain Theroids with a variety of trait scores. Some of the scores are at levels higher than would be normally possible to generate using standard SNI injections, to demonstrate the effects of trait scores that would usually require much breeding and mutation in the laboratory to replicate.



HULKWAR

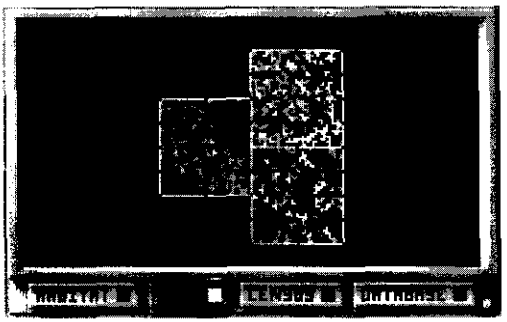
Turn on the NPR for 10 game minutes. Some populations will die off, due to high Fight scores (relative to the other drives). Examine the statistics by selecting individuals in the View screen. Run the experiment again. This time, before turning on the NPR, go into the Body Variables, and set Fight Same to Never. Run the experiment for 10 minutes. Notice any difference? Some of the high Fight populations should be more stable. Try adjusting the Fight Satisfaction percentage to vary results. Another variable to play with is Fight Until. Set this to Need and watch the results.

To test your Theroids in combat, use the center pen and put in another type using the SNI. For esoteric studies on fighting behavior try altering the numbers in the Behavior Variation panels. These numbers regulate the rate at which a given drive is incremented in need as a result of specified creature activities.

EXPERIMENT 14: CANNIBALISM AND CARRION-EATING (CORPSEXP)

This experiment demonstrates the effects of cannibalistic and carnivorous propensities on Theroid populations.

The lab has been run to achieve a point of stable baseline population. The creatures are set up with enough SNI coagulates to leave a "whole" corpse upon death, which will last until the next Food Resupply cycle (at which point the semi-permeable floor absorbs the excess). Note that all three creature types are represented in identically sized pens. Two sectors of each pen will receive periodic Food Resupply to ensure population health.



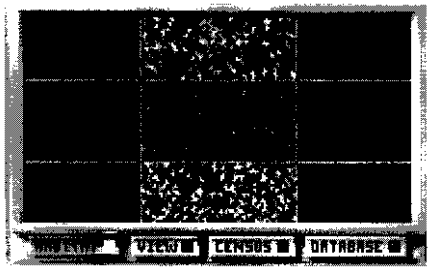
CORPSEXP

There are several ways to experiment with this lab setup. Try opening the adjoining walls between the pens. Which creature will dominate? Also, consider altering corpse size, resupply rate, carnivorous/cannibalistic urges and food level.

EXPERIMENT 15: VIRUSES— GENETIC EFFECTS AND DISTRIBUTION PATTERNS (VIRUSEXP)

In their present form of incarnation, Theroids prosper in radioactive environments. This, combined with a high birth rate and a relatively short life span allows for rapid alteration and mutation of genetic composition.

Theoretically, Theroids could evolve into new life-forms faster than any known living animal. To date, however, only three basic Theroid types have been able to survive, because of the inhibiting effects of viruses. Anytime a creature is exposed to radiation, its offspring run the risk of viral mutation. There are three known viruses: the X virus lowers the stamina trait, the Y virus inhibits vision, and the Z virus lowers the birth rate. Viruses can completely eliminate a population of Theroids. This leads to an unfortunate paradox: without radiation, offspring can't evolve beyond parental trait scores; with radiation they mutate rapidly but can become infected with deadly viruses.



VIRUSEXP

Under laboratory conditions, however, viruses can be controlled. Radiation can be applied for a period of time (to generate mutations), then turned off to allow populations to stabilize. Individuals infected with viruses can be isolated or killed off.

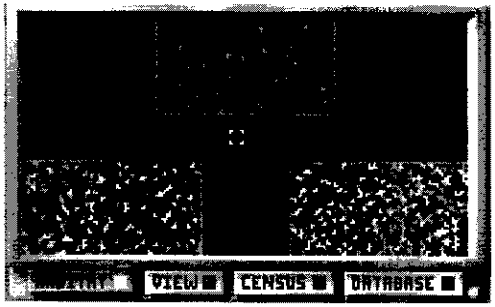
There are nine pens. Theroids at stable population levels occupy three of the pens. Before running the experiments, eliminate the Y **and** Z viruses by adjusting their % Occurrence values to zero in the Lab Variables. This lets the experiments run with only one virus-the deadly X.

To see the genetic effects of the X virus, turn on mutation to any desired setting, and watch the View screen for a count of virus-laden Theroids. Separate infected creatures from the healthy ones and put them into the empty pens.

Next, to see the viral distribution pattern, open the walls between all the pens. Watch what happens in the View screen with the Virus button selected. A wave of disease will flow through the entire population.

EXPERIMENT 16: EXAMINATION OF X,Y AND Z VIRUSES (XVIRUS YVIRUS, ZVIRUS)

As mentioned in the previous experiment, radiation is the two-edged sword of evolution. It creates mutations that allow offspring to vary greatly from their parents' traits, thus increasing the gene pool-which is good. It also causes viruses that can spread the seeds of doom through a population-which is bad. Once a Theroid is infected with a virus, it can never be cured, and even worse, the virus can be passed on to offspring, weakening the gene pool with each generation. Fortunately, infected creatures can be grabbed and isolated or killed before the whole group is endangered.



XVIRUS

This experiment is designed to give you an understanding of the three virus types and their effects, so when you encounter them, you can take adequate measures in timely fashion. Here's a brief description of the three viruses:

1. X virus is the most deadly of the three. Slowly degrading Stamina with each generation, it spreads very quickly through a population, even when only a few creatures are at first infected.

2. Y virus degrades Vision. Though frustrating to those attempting to create high-vision creatures, the stability of the population is not greatly affected. Unlike the X virus, it will not spread likewildfirethrough a population.

3. Z virus reduces the ability of creatures to reproduce. Offspring are normally the automatic outcome of the mating process. The Z virus degrades that certainty. This is not a particularly harsh virus, as those infected tend to die off without offspring and the virus dies off with them.

The three lab files are identical, except that each one has a different viral infection, with the other two viruses turned off in the Lab Variables. Three pens with the three Theroid types are set up.

Run the experiment as is for one-half to one hour of game time and see the effects of the unchecked plagues. Then go into the Lab Variables and adjust the Virus Occurrence percentage and the Virus Results score, and run it again. Also, try different Mutation settings while running the experiment.

UN NATURAL SELECTION

INDEX

A-D

Aircraft 19, 68
Aircraft Deployment 72
Battlefield 31
Big Picture Level 38
Body Variables 58
Briefing 68
c-130 73, 90
cargo 70, 90
Census 15
Census Module 49
Clock 38
COMM Button 83
Command Level 24
Database 16, 17, 88
Database Module 50
Decoys 71, 73, 91
Deploying Theroids 22
DigiLife AL-2000 30, 35
DigiLife Disk Drive 37
Dr. "Andy" Andrew 30
Dr. lngrid Skinner 30

E-H

Evac 7 5
Experimental Islands 99
Experiments 37, 107-131
Files and System 54, 80
Food 90
Food Flow 9
Game Islands 95
Go To Battle 66, 67
Grab 52
Graph View 53-54
Helicopter Types 90
Hermaphrodites 32
Hulks 10, 31, 86

I-R

Independent Research 6, 33
Islands 93
Introduction l-l
Lab 31, 36, 46
Lab Variables 63
Modules 36
Mother of All Battles 19
Mutation Dial 14, 45
Mutations 88
Neural Pattern Regulator 40
Noisemakers 71, 73, 91
NPR 40
Reference 29-106

S-Z

SatBeam 76, 92
SatCam 1 9
Slugs 10, 31, 86
SNl 10, 40, 85
Starting Games 34
Strategies 85-106
Synthetic Neural Injector 10, 36, 40
The Basics 30
Theroids 31, 43, 105
Top Secret Games 33, 81
Tutorial 6-28
Types of Games 33
User Experiments 7
Variables 58
View Level 14, 78
View Panel 89
Viruses 17
Walls 8, 44, 87
Zips 10, 31. 86
Zoom 13, 39