

AMUSEMENT PARKS OF THE FUTURE

SUPERNORMAL CONTROL OF THE BODY

HEROES OF SCIENCE

LASER DENTISTRY-PAINLESS FILLINGS



THE GREATEST LIVING PHARMACOLOGIST

WHY WE CRAVE FORBIDDEN PLEASURES

TWENTY YEARS AGO, who would have dreamed that photographs could show three dimensions?



AND WHO WOULD HAVE DREAMED That cellular phones could fit in Your Pocket?



Surface mount bechnology adds to reliably and Parabase reparation of the

biogram and a construction of a construction of the construction o

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> Special charal microsphere means algunturing exterior sounds for clear

YOU MAY SEE A SMALL PHONE. The story behind it is a small miracle.

200 3

Whan the idea of a celular phone small enough to it in a pocket was engineer considered it a product that wouldn't see the light of day before the 21st pentary.

And for a very good sector. The technology necescry to produce and manulacture if didn't soft.

Ad Motoroid, Inought there exaits a wary unusual wary of looking of longs When Motoroid engineers see a mountain, they clamb # When they see unsolvable problems, they look for solu-

When the challenge of putting the worlds first personal telephone came slong, they met it head on.

chint exist they invented a Dwy bent the rules Then broke them And not surprisingly changed the way the world holds at cellular reformer

To began with, our engl-

neers had to calorn owagn. the integrated circular makes many power endimatining Space needs in the process Need we specially despited the seyned acating the toego cal dust while intermitting it be easier to warding etch cally of sight Real the patiented microphone design eliminates formation of dischools for manual No services it have

housed as one of the best dosumed products of the last decade And has won awards of excellence in the United States and Japan as well

All is all some parity measures frings are happening al Motarola And we we got news for you The Mana FAAC is put the baginning



The way we gut them regulater sets us apart

(9) Materials MicroPole C and Digital Research Communicator are trademarkeral Materials from © 1999 Materials Inc.

FUTURE TALK

THE FUTURE OF GLOBAL COMMUNICATIONS: We have seen the Future and it is wireless.

It's another work day and you're on the 7:05 Maol ev train whiskind you at 190 miles an hour into the big city Your laptop displays the morning news, which is beingbeamed directly from the wrei cation revolution. And the revolu- ultra-high frequency, distortionservice

Suddenly, you hear a beep coming from your wrist paper The wethal mode locks in and you hear an electronically synthesized voice telling you to send we 77 the facts and figures concerning water an instrumo's new business pro-First one way, possil From your pocket you pull he simulty out your personal cell far tele. only They are being replaced by

future? Maybe so, but what may sound like tomorrow's technolony is here today. Botht now we're in the midst of a communition is wreless

The freedom that a wreless system of communication affords will have a least less affect on my that tied people to one location ever since Alexander Graham Bell invented the telephone have been all by advanced technol-



downlaster phone and say. "Call my boss." next to not Automatically (dials/hsporsonal travers will communicator. You tell him that averagety. The requested data will be immete exterieuen chately faxed Then you plug your cellular phone into your lap comonds, your boss is reading the facts and figures

A few minutes ister, another massage from your boss beeps in, thanking you for the information and asking you to meet him downtown at the Expressport

high frequency radio technology and ultra-sophisticated phone switching devices. Combine that with custom designed integrated circuits and you have marvels like voice activated calling and voice synthesized message capabilities

In the not-too-distant future. the phones in your office and home may be wre-free With sound quality that rivals wired quality But wireless voice transmission is just the beginning.

Sound like a page out of the Technological advances are making it possible to transmit rists as well.

In fact, it will soon be as nommon to connect computers by free radio transmitters as it is with wires that run through walls. Even nortable computers. Ike the kind you take on trains can be in constant contact to their data. base. When someone needs to access the mainframe, they simply plug their computer into their cellular phone. What's more, the activent of clicital technology will ansura armstree ciata transmis.

Even more astounding, the effects of the wireless revolution will soon be global. Companies like Matorola type on the drawing board plans to launch 77 kw Earth orbit satellites that essenbally will allow anyone with a cel-Jular phone to communicate with anyone else on Earth simply by disting their personal telephone number. One person, one number Astaggening achievement

All in all it's obvious that the future of personal communication has no wres attached. The freedom it will bring should allow for unheard-of opportunities for increased productivity and personal enrichment

And for those who feel that being in constant contact with the world around you is a little too. much like 1984 remember this You can always turn it off

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EDITOR IN CHEF & DESIGN DIRECTOR: BOB GUCCIONE

PRESIDENT KATHY REETON GRAPHOS DIRECTOR PRANK DEVINO MANAGING EDITOR STEVE FOX ANT DRECTOR DWAYNE FLINCHUM

6

First Word By Sally Struthers Why are millions of lads dying every year of starvation when thore's a worldwide food surplus?

8

Omnibus The Who's Who of contenbuting authors

10

Readers writes

14

Stars

By Victor Dicks Its all done with mirrors. Benging the heavans down to Earth was Angel's miracle. The based subscope linness are giving us a closter view of outer space.

18

Arts

By Tom Dworatzky What kind of interiors can you expect from a designer who looks to science fiction for interivation and to God for approval?



20

Nind By Anthony Livensidge Wanning Keeping those dirty thoughts to yourself may be rezerdous to your health Body By John Robert Marios New ray of hope? Dnils, needles, and per are being the class in dental officies

24 Earth

By Stave Nacia Down under The soarcity of metropolitan sates in Japan world stop expansion, they re now planning an ontre underground of/

28

Space By Nicholas Booth Once travel to the stars is feasible, will the trip be worth taking?

32

Explorations

The seman is making a comback DNA from prehistonc blood is playing the leading role in finding rair code

33

Continuum A guart letep in ginestic deases research entraising hopes for those affected this 1980 do you know who your powerts and? Coethesp. For some meles, sois can be failed if you're no thereolog dhurch, you may be searlifering you'r haidh

Sold a solution of the set of th



Hadrog Fan Bonortonis Donortonis Donortonis

50

Fiction: Tower of Babylon By Ted Chang The towar had been completed and in a short while the workars would broke not heaven But would they encounter Gods with or wisdom?

68

Pictorial: The Airtight Garage

by Kellee Monishin Framed by The Russens Prench cartoonal Jean (Mostrus) Garaud will have his come step captured on film in the Soviet Union.





72

Truth & Consequences By Julf Gostbarg Roger Boisoby warned NASA belore the Chailenger deaster Not only was be ignored, he was demoted Others have site authered for their honesty Whon will here hereas be honered?





78 Interview

By Douglas Stein Just say, Owth Nabel proce-wriner Sir James Black developed wonder drugs to sellwate abor sen and boat heart disease What a next for the miscle make?

84

The Mechanics of Hydricium By Fanch, Tanney Yogs and huly men hore big demonstrated aupermanal control over brooting and heart nete. But how well would their powers standu up to the rigos of scientific testing? The studies produced some starting results

90

Fiction: Après Moi By Gardner Dozos t wyant faz, Allan alwaya got his way When would his lucky smail end?

97

Antimation

Pilot program The search for LPO wheneaue Desame may reveal your unconscious houghts, but our they also predict the funne? Does your cat like to near? Maybe your poto a Stigttaren to five-year-cid Spanish boy the rencementari of a greet Buckheil same?

137

The Ornal Arcade By Bob Landstrom and Scot Monts The fetest in computer and victor games: plus the rosults of Competition #51

Site Tech By Stave Fox Lightweight and powerfulthe reweat leptop computers promes to portom as well as the homebound winami

144

Last Word By Judy Note! How well would you fant on the Natholson Scale? Any you mensity psychose or the Devit removanter??

FIRST WORD

SAVING THE POOR. . Learning how to feed all the earth's children may be our greatest challenge

Saily Shuthers, Excan nationally for bar secrit in Intevision, is the chalipperson of Chroatian Children's Fand.



In Charles Diskerer A Christmers Cavel Seroops is approachad inhis danit and chily office by a Lordin charly seeing balas this poor a Christmantime. Bologo and pulse whether has meeting requires whether has meeting repeatern seasons for responds that many of the poor words attache de thing poor such places Seroppin reply cohogs many charles the sum balance of and decrease the surhos populatern[®].

Act even Dickens, so sonsitive to the pight of London's poor, ould have packed how much Second strain solution to powarty and overpopulation wold become reality. The population of the earth continues to grow while the poor continue to do in unprecindenied numbers.

The United Nations Fund for Depuiston Activities estimative that the number of pacele on Earth has passed 5 bitlen. It is traged figure 150 tables are born every minute. 150 nitive mounts to feed in a world that alreacy cannot feed at third if to prople adequately. By New Year's Eve, 1999, the number of people volume to the number of people. (a) By 2010 there will be 7 before then of us accupying outsiders with the buances of hang and dying lowing and hears, being inch and being pooe, and hying to solve problems linked to global crowd conteil Coursening dislation meaning all blann. A carriary too meaning all blann A carriary will have insolded 10 blann When it must reached 10 blann.

Cit the 80 million possile actied to the verific populment each year. Itri ico many are detimet to be among the poorter and nungried; poorter on Earth From them all come the more dars under the appenditive who the each year because they are to opport to be healthy. These are the loss who will do from departer spaces by manufacture. Jeans are an eff the dividual at the loss who will dowing an the loss who will dowing at the loss of the area dowing at the loss of the area of the area of the low borg since deminator are ultiferturalises, rea sam with a

Externalizing rule seeks were of the There Water and a Constraint number of the Constraints and the powers and neglect. There are the children tables become objects and the Constraints and the children the Constraints and the the children the Constraints and the Constraints and the Constraints and the Constraints and the the children the Constraints and the Constraints and the the Constraints and the the Constraints and the Constraints

Neerly 15 years ago 1 made at commitment to do what 1 could to light poverty and hunger. I wais driven by the meany such a plight inflicts upon children Thet commitmet earns developed with the pertant to me today as wolid popuitation communes to escalate Stowing the growth rate is in Repeal demethal wear 1 but the promose to

agonizingly slow. There is much we can do now

The problem is not a lack of load. The world produces indust food to feed its 5 billion inhibistants, but we need to grow it where it can do the most good. How trustmeng to realize that there are hursteads of missions of lons of grains in storage—right how—snout the world. We we got to allow more people access to world flood supelles.

The score, the automata, is that in the ocurrises where the most repal nonceases in population are taking place and the pocnist people law, food another of drought have contributed to the clacking, but so, too, the longering

What has be traveled for Christian Children's Fund to make table sen programmed and option announcemanital, I via seen frammer still using ancient looks to acritable hive dry earth to plant sateds. And too dhan there are only the most primtore ways of utilizing what Mile waher or associable.

What is actually happoning, repeoally in Arica: is that the population is currently the ability of farmers to grow food. In Kerya, where population growth is highest, there will be an times do many population in the year 2025 as there are locky. But will there be as times an insch food?

Elswing population growth is contrary on estimate to firs protients of things, powerty, and upoff social that work is a second to the second second to a second second second second taught with controverses, a causeton that must be answerd segment pressure control by the weparching pressure control by the w

They say It's going to fly. Of course, They aren't going.



Conferency 30 3852 Bu Attor of Feedbay 7 Annual to be blasted the first Assessme Joins Glass sub Lastic over His into orbit.

The machine was originally America's first intercontinental ballistic missile, developed by General Dynamics in the early 1950s, and for nearly 10 years the free world's major deterrent weapon.

The men were the Mercury astronauts.

The machine was our Atlas rocket.

Their histories merged in the early 1960s, when General Dynamics began reconfiguring Atlas to launch payloads into space for the Air Force and NASA.

Since then, the stainless steel sheen of the Atlas skin is the only thing that has remained unchanged, as literally thousands of technological improvements have been **b** incorporated.

Atlas has boosted virtually every

lite In December

it boosted the world's first communications satellite, Project Score,

The Joshik foliog does not perfect to appendes yo had to social disks of scriptlestess in edificit to traving approach General Dynamics also built tracking stripes amont to give



which circled the globe broadcasting President Estenbower's Christmas message. Atlas went on to launch's forme communications satellities, and dozens of scientific probes, including Pioneer Mariner and Surveyor the first American spacecraft to soft-land on the moon.

With a record of 496 launches, our Atlas is one of America's most successful and reliable launch systems.

Our 30-plus years of experience and the dedication to excellence of the Atlas team are especially important now.

In one of the largest commercial space ventures in history, General Dynamics has committed to the production of 62 new Atlas vehicles for sovernment and business missions.

For over three decades, Atlas has made history in space.

And paid dividends here on Earth.

GENERAL DYNAMICS A Strong Company For A Strong Country

OMNIBUS

LOTS OF THRILLS, NO DRILLS: -A fun worshiper flips over teacups, and a vampire author goes "Aph" at the dentist's

Contributors, A clockwise (toper bottom) = A.J.S. Ray(, in John Robert () Markow, Victor to Dincks, Anthony Co Livensedger, to and Stave Nacle



excernly a sufference fieldow. The conner mon and womme who have put first reputations on the livels reput average (consisting Fatros Adapts assist) on the livels (Truth) and Consequenting page 72(b) sawk out the unitary p



when it may ocist you your job is an act of herroam," says Absorb "But on some level, i doe it as a provinge, too. How many opportumines do you here to put your pencypies into action? Pentops in the Nacess the huth will not be name says pressioned by a few but the standard by which all of us messaire our humanity'

For your recreational insolution, autors AUS Bray (Making Pun) page 42) reports on what we can expect from the un-filed analysisment parties of tomorrow. Ray and Commensing recitors Steve Recmed Virtual Heally together. The complete simulations were so corropelling, we almost head to ge in alter the manager addres and the taxes in the risk and the spenning topological to consistent. What Rife ality in he future but the spenning topological to comparison.

Patrick Tier-

ney (The Mechanos of Mysbosim' page 64) is the author of The Highest Allar The Story of Human Sacri Sce(Veing Pongun, 1883) Pote per-

Prine per-

off for Thomas Basis Universely page 7(b) His reward a meeting with the ablance pharmacologist Sir Jamos Black. Write docens of bene calls Black Inniky agreed to meet with me attaining. I don't work you togo bankrupt, you work you togo bankrupt, you work i basis as the safter of Campang with the Phone and Other Talss of Science in Africa (Houghtan Withe).

Things have changed considerably stoce John Robert Markow (Body page 22) last visited the dentst Markow writes about the new technology that takes the drill out of dentiating Station seen before nichtfall. Markow is currently working on "a different kind of wamptre novel "What sithe link between dentativy and wamprism? One can only impose

White respecting the latest Jupaneter plans for developing outer space, Stave Nuclis (Earth page 24) sturnbled onto some fascinating information stoud the Toleysurcherground. That's typeait says Nuclis. "I recently went to a conference in Altants on mitrory and returned with a story on tible mean many page.

Victor Dricks (Stars, page 14) reports on altronomy and acance for The Phoenex Gazette

Anthony Liversidge (Mind, page 20) may be British-born, but by no means is he recorved. Expound the psychology of buth in science is of particular interval to me lisaxis Liversidoe.

Always is sucker for a puzzing expension 2 there games either Soot Monie (The Orni Arcade Fing 140) has booth brilling readers areas the premiere issue. This is my function 1 have a coclerent for fluctuating the all a cotent for fluctuating the all a cotent for fluctuating the all a cotent for fluctuating the all acctes upporting The dimesor Web Area the block and Other Skonge Racts and Uspates information (locableday, Fabruary 1991)

Computer Shopper editor in chief Bob Lindstrom (The Ormi Arcade pages 137 and 136) is the first rectaint of the Schware Publishers Association & Journalism Recognition Award as best software reviewer

Author Ted Chang is making his science-liction debut in Crim with Tower of Babylon (page 50) Chang's work will also appeer in the science-fution arthogy Full Spectrum 3(Doubleday)

Gardner Dozens ("Apres Moupage 90) is the editor of lease Aermovie's SF Magazine. His story, "Noming Child" (Ome, January 1994) won the Nabula Award, given by the Spence Fiction Writers of America DO



COMU

COMMUNICATIONS

READERS' WRITES: From ancient cultures to future fuels.

Technological, My Dear Watson

and Don Rey [August 1990] is exactly dimpse the future. I'm something of a allowed me to incluige in the fortage of being a future crimebuster-tracking

Regarding Peter Coman's article "Trouble in Paradise" (August 1990), you tok. "Could out outproty kill fitse Matseal putture?" Burning a poor moniesy alwaising my conception of respecting the flore

I was deeply offended at the exploitole culture by presenting the Matses as torture of a monkey was uncalled for

Linda McClair

hist lessons I learned while exploring so different from my own. The only respect an author can own the subjects tipe of nursing motherless infants over do suppost that the Mateos have developed unique traditions retranding

Furring Over Fuel

I'm writing concerning 'Rutning on The Ar [Contrium August 1990] unlines. There can be only une reason having a tough time decling their memauto industry can take is to retool and environment aren't takan care of 11 the invertion works. America could enior a

Tracking Celebrity Inventors

Regarding your guz on celebrity inventors [Games August 1990] you left out struments and perform a wide vanets track tape recorder, the one he and he with Mary Epoci (Coleren Summers) Moon" (the first multitrack Top 40 serole) and "Yowa con Dios." Lunderstand hands of the Smithsonian

Streen F. Scharth

Ashestos Homiero?

Unnan Lot read "Astrontos of Teal" Kingtimuum, August 19601 As a former butswatched many of my mombers-includ cleaft from sebeasce. which you say is not harmful. All those who survive plied asteration maulation in buildings throughout New York Dry, and many of

Thomas G Viskovich CONTINUED ON MISE 116

STARS

MIBBOB MAKER

How one lone and imaginative astronomer created a revolution in his backyard furnace

Bage Aegel winds (m) has well as a stroke belocate method her Pyetolocate method her Pyetolocate minister has bepeter to the stroke and the stroke method her bestart to the stroke and the stroke the stroke and the my experimental approach to togother, then formed a horrogetoous mass i has begin a finations in the formed a horrogetoous mass i has begin a final-

Angel Is relivacie: Melang to And the Raw in the Muthile Spece Telescope's marrors, he has dosigned and cest siz other reservors together, then formed interrogmoust mass. Thus begin in Indoturon these benchmals tolday. Ange's baching's block-pertitive rose whick immerg histocope the process of melong billiouspects the process of melong billiouspect the development, amou large bibliaction and minoral block attordemy to dealant under hor care weight. An get is one of this most creative expansionations in the fold of

Wolff director of the National Optrical Astronomy Observationss (NOAO) in Tucson "All of the U.S projects, with the exception of the Neck telescope, will use the techrobox be has devideded

Even NMSA, under very reverenzisem for the S15 billion 1-buble Space Toleocope debatele function for experison of the other entratis to find out what went weng in the manafacture antifectiing of hubble similar to an entration ing to one store many mainting the exands at the University of Arcona, Angel took one look at the first maps produced the ybbble mode to proceed the ybbble mode to the similar to an entration of words that inturated a NASA celliance. "Schemat liberation"

The picture showed it kind of freelegg intege "Angel said." It's hard to get that if you start out with perfect optics." NASA offi-

> case nave assess accurst reny the poblem by fiting compose memora or lanses to replocement nativments an appproach that Angel concurs with "It looks as though the solution will have to be done as as reployed by nativinent bosis. There will be on queck the "

To Angel, Hubble stroubles only underscore the impartance of continuing to build new mimors for our ground based transverse

In a tab bereach the University of Ascena s With cat Statium. An gai mets borosticate glass, the stuff that Pyrex is made of, in a furmade of, in a furnace. The molten material flows around a honeycomb shaped mold and leaves a puckle at the top and the bottom.

The fumpor shell robbin, producing certifugal force that pushusing motion glass lowers the minners outer adge. This process creates a bouilke disproteers in the center, backed by lightweight hits, which Angel calls a Transpcent syndrech.

A doke approximation of the miror's final shape is a flowed to cool before being ground to priceson apachications by a roboti am Using furness and robotic holp as (final with builting heads that Angel helped design) shaves mitioned design shaves

To data, Angrée lab han cala a bit al au enroche. Des 11 bit al au enroche contento la bitalizza de la montento andreade la Maxima Caladan e norma de la contento la previo versaja of Calagora in Canada na versaja of Calagora in Canada na hana de la contenta any NaXA and the U.S. Ar Forces place menors at the Mattige Mark mark family as a forces in testers and the second second second second place menors at the Mattige Mark mark family as the testers and place menoral the Mattige Mark mark family as the testers and pages in tencical in family and the approximation of the second second pages in tencical in family and pages in tencical in the output of the indices and the second s

There is great excitation in the haid of ground based estronomy newedays 7 says Angal. With the carbie to see many applications even befor from the ground finit in Hubble Malescope will see whan it's functioning contextly. — Woth Data Data



ARTS

DESIGNS FOR LIVING: Start packing your bags. Your journey to the future is just a hotel reservation away



Gireme sheiter: Internor designar Philippe Standt barreven Inden to create apodes Ne the Pervenyunt Hotel's Jobby. A consistence of the second se

All eyes periodically turn toward the slock stancers a sweeping expanse of marbia and Pitogias that dominates the lobby as all Acced or descend those pernum-periodic state and you will be watched infact, the entire tobby at this utbeam inm is a stage for travelers' entrances and electouts there checkens and checkouts The Rearranger as the lated of the Physics A Transmission of Physics and the A Transmission of Physics and the A Transmission of the Physics and the Physics and A Transmission of Physics

Statck foresees a future in

which "pactifiered latery not inflamling, but n cultured hibbs," identiing themselves from the cutalex world. "They will he in burkets of lots with giant antennas, communceating by satellite to cutales they never see," The dosigner says. "Than't just be one person with the power of the whole wald in he watch, or perhaps his brain-abionic men and, around him cuting die ".

The chair of involveness that ann begand human senses and abilities. Sence points cull began with explaines, automotives, and computers. Today facesime imcontent internet in actually talk to anyone. Interior design, however, will prove people with "afrirandy ago, to show them there are freedo averywhere, not only emission remarks and weinnon," he aver-

Startschau udded Juurisi C pa nacha to inclute, mightchute, and other meeting places accound the world New York Chrys Reyation Hotel, for example, is broken up into individual reluges, wil there monochromatic schemes flow from one area to another, creating a sense of connectedness.

* New to recreate images of the year 2000 as people environment in response to the second second second second and the response of the second second second second to the second seco

TOO TEMPTING TO RESIST Trying hard to repress forbidden thoughts may be dangerous to your health

In yearget, we want to be a subject to the second of party to accurate of party to be the main to accurate of party to be the main to mercy hauget in the second be the group of the electronic parts in de group of the electronic parts in de group of the electronic parts and actual the to based helps a actual the to based helps a actual the based helps and actual the based helps and when a hypotrolic part to Mean and the actual the based helps and actual the parts and actual the based helps and actual the based help

Trying not to think about forbidclen delights or a painful memor) seems good peliny Charles Dewn work har in englinit posible stage in moral cutators is when we recognise that we sught to certain our thoughts and the second international and the second international allocation and and other psychologistic contin that we do all of directors and system and allocation and system and other psychologistic contin that we do all of directors and system and allocation and system and allocation psychologistic continues allocation psychologistic and system allocation psychologistic and syst

The trouble as Wegner loss applies and case, the Deck applies of the Deck applies and Deck applies of the Deck applies and Deck applies of the Deck applies and the Deck applies of the Deck applies and the Deck applies of the Deck applies and the Deck applies to the Deck applies to the Deck applies and the Deck applies to the Deck appl

This Swaggart, like fellow outcest Jim Boken was the intentity bit watern of his own moral straitjacket. Wegner explains Because these were man whose an the lives seemed okoded to the suppression of certain exching thoughts, they came to find hermelaber sizewater for the serve particleaber sizewater for the serve particment they dihoped to suppress

In is same pitkl appeet to negsave thoughts: Wegnet notes Try too hard to ignore your lentor of you may develop participation and you may develop participation on and a same pitch and of neerbal cell-control, what is the enand? Stop alooping anys Wegner Elaborate in the thought exaggerate is, and direl on itliberately. It should become detased, over bong

Alter investment and the first constraints of the second s

Wagnar with Pernesation is do ing The Francekork Weter Common meth-he hoppus will change he ways throngosts torel cobserve parents Too often. He change, the he ways throngosts torel cobserve parents Too often. He change, the method was throngost and the seens like hose Antony admon where to his one that yoo anter a no notoers unsustate to will well was throng boots of the tore to the this the model well than packed can do May be hose to the hose can do the method was the top boots of the May be hose to the hose can do may method was the top boots of the top boots method was the top boots of the top boots with the top boots of the

Could leterringehist Jicerry Swiggart have been the servitable weber of Als over moval strat-

BODA

DENTISTS LIGHTEN UP A new laser just for teeth and gums ushers in a kinder, gentier brand of dentistry

The contrains Arrive that who would have a contrained of the second contrained of the second

Nyes began daveloping a laser specifically for dental work in 1983 after veleting his ophilaimologist brother. Dr. Williem Myers use a similar instrument to paintenity va

clouds that some trees form be hind anthcall longes impleated at the eyea after cataract surgery The tostating pulsed neodymean yttrium-aluenneum-garneit (Net YAG) issuer has an each bean used for more than 100 600 dental procedures in 12 occurrises including Genada English Janeit Moore, and Australia.

Because the increase. Because the increases the term of the set of terms of the set of terms the set of terms of terms of the terms of terms of terms of terms men closed using processes mendations of the terms of terms medicated in the set of terms medicated in the terms of terms terms and the terms of terms terms and the terms of terms and the terms of ter

With the lase: " says Deliver K McCarthy one of the tritt dartstall. In the country to tak 4 experimentally," we can clean out disensed pockets of gum tasses to the point where the body can heal inself. We can also make the both more resistant to future discipulary significant treach."

Bit previoitions of a rough table for the NATWA base—which the onved market permission from the Flood and Charge Attrimistiants (FDA)—may be promation, says Goold Kuogh Hand of the diverse of operative identiative and the diverse mark bit bane down and the diverse was addressing based bank which are was addressing based to be washe to out the VAC norm was was addressing based to be washe to out the out the other entropy of the out of diamagence underfure, nerves. The heat from a laser powerful enought to penetrate enamel would hell nerves on context): The M3 VMS has a limited use because you still need to use your drift—to enlarge a hole in a tooth to the care a restoration. The says 11 do below that bears have a place in dentary (1 just don't think the sis the have of this time.

"There entities of laser density, in entities of laser density, and executed costs of the regime of the entities of the time for entities of the entities of the time for entities of the enti

Denfets already lang taken predict the vehicle is a year off years denses will be able to surwhom the basen and the surband and the survey of the part of the survey of the survey of basis dense the survey of the next off years and a work the next off years and the survey of the survey of a more than a work the next off years and the survey of the survey of a more than a survey of the survey of a more than the presence off of the survey and the survey of a more word?

-John Robert Marlow DO



Lock, Ma, no Novocany The new Net YAG loser (shore) travels filvough a fuberspite cuble (below) to galekity and painteerity saporte descend colo.

EARTH

SUBTERRANEAN VIEWS: The latest building boom is taking place down under

See Allos by encrete bound to be the set of the set of

With space aboveground at a premum almost were major Jepanse construction company has a proposal for disvisioning it into two used to free another space, may chim claimody associate director of the Under ground Space Center at the Unversity of Minnasota "They call is one of their two fromes. One backnott, staket the Libert face for they assigner the Shrina Locomotation, would groun the state of the ground contentiation and state of the state of the ground contentiation and state of the state of

Chourse, the Jeptenes Areth In the to concern subternament structures. About 40 million Direse outrenty mitable laws. And in meaning years the Chinese government has convented and delense shellens—balti in the Calal Waranato shelid against a potental Soviet nuclear attack—mito httppping chines. Itabit. raziorants, and hospitals. Even in the United Status, a churk of the Amertosh theatfand—a siguate mis of space in Karrais CH—this gone underground to provide a place for food storage, warshoulds offias and manifectuation.

But Japan has the most farreaching plans for the future undetworld in addition is subtrainneas thepping and work certeins, proposals are currently on the dawang baards for such structures as unsingeround highways and unamated mini dawang sunais. The instance has given rise to dome 30 committee—univale comparise, government minsing, and university research cantem—this mady repeate of univerground dawappenent

Meanwhile Mensosis's Underground Spinico Centre and the Binntau Corporation are working on the psychological kinks of luing underground, dialamining, for home of the spinic and the spinic to the spinic spinic and the spinic between claract plane that the object of the spinic spinic object of the spinic spinic object of the spinic spinic spinic spinic the spinic s

Procuency on assifiation may overcome the obstacle Plans include using theraptics to pipe sunlight down through intry doerings in the colling, or full-spectrum ortificial light varying in intensity and option through the day.

Through sported by the tack of space, building underground could catch on for instehan reasers. It save a ensity. According to Globor Si oblary, research professor of utake a sainy. All Ahman sylvama Sata University, cold same and a same set of the providing cooling left from same mar haat indeed the benefits of file underground mitry latit outweight he need for a noom with a www-steve Nate DO

Space saver, Huel Midwest Enterprises of Kansas City constructed its facilities underground



SPACE

THE NEXT 100 YEARS: Embark on journeys to the stars and travel to Alpha Centauri or Barnard's star

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But the detences involved any sograwith at in incentialier Santa Mate sets off in could well be overtaken by an interstellar Comcede is fee cantures that have socedes may prefer to back their time rather than entains on purnays to the stars as soon as they become inclinically coastelle

Authors: Eupane Malove and Gragory Maloff outined three beac approaches to interstellar travel. In the aummary below the term world alto refers to vest ro terms, overchaal sequencits.

Low speed world also. The journey would take millennia. Generations would be born and die on the world ship before the destruction was storched.

 Bomedical extension of Me apen The extension of human longenty through the use of genetic engineering would allow craw members to reach than deaths ion star system regardless of the velocity of the world ship-

 The twice paradox A world ship would travel at near-fight speed so the relativistic effect of fast clocks run alow" would blass time to aborten perceived journey length

After the high-reading to bitwell the manual pacential could be a soluble, the neural pacential could be a soluble, the neural pacential could be a soluble of the solution of the solution of the solution of the displayers in their way and the solution of the displayers in their way and the solution of the solution of

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Forn Space: The Next 900 Years by Nonoise Boot: To be published the month by Grown Publishers: Inc. Copyright & 1990 by Michel Bearing Pubschere: Africate stearing





EXPLORATIONS

FAMILY TREE:

Blood samples from prehistoric stone tools may help identify our ancestry

Nearclashal man caucht mida tastationg chance to anywer verceal Museum, was studying an ago Examining the tool under a couldn't beleve what I was see-

more then just and primitive HOIDONS.



have left cloca answer purphing aprestions.

about esseria uno human evolution

In 1961 Thomas Loy then a cu-rator for the British Columbia Pro-

then compares them with control

he believes might be from Neanderthals Loy and collaborators

this DNA material it's unlikely to happen. We re a lood way from raws Dr. Laurence Kedes, drec-

Even so aust deciphering Neconclupes after all can identify blood residue it will also be pos-

knowledge," Loy styls, "Within the from Lucy [the 3-million-year-old to being us and trace the entire kneaps of humaniand

-Linch Maria OO



CONTINUUM

PRESERVATION: Battling with a fatal disease, hunting down endangered geese, and restoring hair

As a child rebaint of the answell being that in acstree Born 1969. I thereas i CP the gendes answell and the former i wheread my parents and theread my parents and theread thereas i the thereas i the parents and thereas parents and thereas parents and thereas parents at the thereas of the parents at the parents at the parent at th



Not only would 1 grave to testeral luas a very name child both with the without the state of the universitie. The grave research and child experiments the part research and child experiments and the patient community and the upble mb belowing that areas the upble the belowing that areas the upble the belowing that areas the upble merry Some patients from second that parts the second scale tages on much their grave.

acquired my carlent memories, of sci-

ense after al, in the list years of the Soventes, when most polities remained in name of the greet ing to the mean it seemed to me then that if scientists were free to nagotable space tavel they must feel proty confident about helping solv people.

Gyste larona, the leading genetic killer of childron, weeks anych truck mucca garbeits in the large, grows intotaci. Then debilitates the large until the whole researlarcy agermany acute of university to the structure of the at least any years on the interfaces devices that the provide structure of the interfaces of the structure of target agermany acute of university to the structure of target agermany acute of university of the structure of target agermany acute of the interfaces of the structure of target agermany acute of the interface target agermany acute a way to number the mucca too the too gather in the hear labor of kill the relevant before deferrer of the larget

Last surverer i recover my increated as installation and Repring Timogan the were since as a surmer in overpre got. Least that researchers had isolated the generic case my set of the surverse surverse in the set of the surverse in the surver that the reverse surverse surverse surverse in the increar that the reverse use surverse surverse in the one that may lead to some sort of patient mattered during the teertyleast crearing in last does and one fast may lead to some sort of patient mattered to rever, before generation reversely wheth any supplications betoring the teertyleast reversely wheth any supplications betoring as comes to reverse any supplications and patients comes who may be and before with GP. observers think we want be fighting this fight much langer Arrunds we have never been in such a despecto stu-

alon. The costron commune, well-meaning though a is a throat cristian is bring no bundle for the pointed research that is a stroat cristian is bring no bundle for the pointed and the next. Criscal issues that built be common portaging of the point of pointed instruction. The there is the have attack your therearches that a restore user. Of have attack your therearches which a restore user. Of have attack your therearches which a restore user. Of have attack your therearches were pointed in the clinic of the parents in the your angle of the outer point children's parents and using patients who have noticed the response work down in the lifetime?

Perimakry drug expensests on emelonde and Perimakry drug expensests on emelonde and large, any exmerginal and the large structures that of ogn and the problem of the large data of the large structure the drug and the large data of the large structure the drug and the large data of the large structure and while restance fractions are used in the structure part to be all systems the restance in the large structure on the structure. The large structure is the structure part to be all systems the structure is the structure of the structure the structure is the structure of the structure is the structure structure is the structure is the structure structure



CONTINUUM

SPEED BRA

Speecing crivers nethed by radar, take note To avoid those sckets, you might do well to buy your gat a bre.

Deriver internet hip hume has dispect into the high-tech materials used to sheld B-2 bombers from energy tadar and adapted them to cars. He found that isherhing the sheath materials user the noise of a vehicle motes it much harder for makes given to detect your car.

Fuller and out to destroy traffic rules or create driving chaos but he says his Carthrelis Streath Una Errotects drivers signified unifier robar readings" until law antorcoment agencies modify radar sequipment to minimae human error —Pliggy Noorsen

Sportbras Rashing your nearingres in public will no longer

SUNNY DAY

When measuredge II the measured II the measu

CHURCH SUPPORT

Even if you think God is dead, it might be a good idea to attend church, says Devid Larson, a roseand psychashist who works with the federal government

Larson reached his donclason by company the blood pressures of 407 healty null aim who wait free of carditrasoular diseases and hypethesion. He found that main who adanted onlycon and comsidered religion important head agnificantly lowie blood pressures than those with low attendance who considered religion to be urimportant.

Wole supporting study larsing, another including ers had lower blood ing anothers, and men who had the interact in religion but strended church because of family or commaniblood pressures than men with tow reasons who did not attend For the sale of your blood press.





Attancing church may raide scritte and lower screep

Lanson, 'you should go to chusch wen 'you don't hiv it' The benefits were greater for men over fitytive and Lanson suppress here and Lanson suppress women and urban divelates awys, it has official professional don't pay encount abertion to the importance of religion and these seres it to piny a transful role —Phul McCather

"In all affans it's a healthy thing now and then to hang a question mark on the things you have long taken for gaantiid."

Bertrand Bussel

'Alwaya taugh when you can it is cheap modicine ' —i and Burtz

35 CMM

DEATH BY SEX

Left to his own devoces free mide lock probabily wouldn't bother to mise at all if the ferma of this special cid not secrete an aroma he can't issue. This chemical sex prevences, asy Daniel & Sonershins, a biologual controls proteoral Cold Dominion at Cold Dominion and the protect ball for an abung kep that will halp biole many cleasted todes out of the reproductive cycle

By million platfollow, and the mode, produced in the labor mode, produced back called parametry backs called parametry and the called parametry and the called parametry and the called parametry and the call the south on the called and abacets the poson. The test mode in motions and abacets the poson. The source and an abacet the strength and the called parametry and the source and an abacet the strength and the called parametry and the source in the source source and the source source in the source source in the source source in the source source in the source plantmous an observed in the source plantmous an observed in the source plantmous an integration of the source integration of the so

Meanwinks, the inventor says, his traps should be sought after in occustries such as Mixeco, Australia, Argentina, and Great Britain where tack-borne Investock diseases are a big problem ~-Decree Notbe



Trace is faiting away for some party creations: An assay around loads is geting some males in sousiandistance converts to be that is which are dona to make with anything.

ASTRO BARFS

Kan Maney, backup prelead specialize on NASA's internetional Microgawky Lab Massier, will be getting out of shape a few mainter before the December target daw That's right Money, an avoid badminton player and in-shape hinds guy has measincher motion schness and discovered higher your chances of opting skift in space

Abtramal termulation of the inner and a watbulier appendus which plays a chastel role in balance chaster in balance chaster in balance says Money, a physicilogiat of the Ganadian Detance and Givil Institute of Environmanial Machania-About 70 percent of astronauta who have fourin space have oppen-nodisome motion sckness, with 30 periorsh vorting in a necessitatudy Monay culied out-of-theye subjects, tooled drain for motion saturess, thon put them on an endurance program that increased they there are reteriod. The dripphape subjects were significantly more vorth process than when they were count putations.

why bolded-stage people suffer leas maken schnees?No one scure but die harmane ACTH may be rwatved. Paople alto are not prone to motion achress have high lines of ACTH. Maney explains adding that here subjects apoint be tower lewel of the hormane. "I wane correct." says Money, "ACTH may tell the brain to groze the confusing messages from the inner ear that lead to motion sectment."

In the measures Money, deservit suggest that mitiagy plots who sequences motion sciences toolerake an university to-style for their arise carriers, but actomands that isofore write two or three years are another mitige for another mitige for another institute and actor a subtractive for another institute and actor a subtractive for another institute another another another for another institute another another another for another institute another another another for another an

"Nu carnot acquise experience by making experiments Nu carnot must expenses Nu must undergo it --Albert Carnue



CONTINUUM



GET DOWN, ROVER

Man'S best friend has just mode a new friend. Aleutian Canada genese in danger of extinction 20 years ago, have made a comeback marks in part to fise hanting instructs of two colles comedit are, and Con

U.S. Freh and Widdle Service brokget Vernon Byrd bays that in a four day perced the two dogs hidged capture 143 Alexten Cantoda gees for transfer to other relands along the Alextan chan. The dogs Would scramble around and make size cantols around and make size cantols around and them, fours Byrd. The geese would hurker down and let up polit them up.

In past years without the sesantarios of the dogs balogade splically worked for how weeks to capatite an managed of 120 galaxies "Thanks lot do dogs in boots without a start of the dogs in boots galaxies and the dogs in boots galaxies and the dogs in boots galaxies and the managed ormoroptics when hologalaxies and whole rounday was easer, finater and chapper - The Wole rounday was easer, finater and chapper - The Korkon

GOLD FINGER

Fingeprinting powders work only on a limited tange of purfaces—glass and metal. for example—a fact that has long hindered law onforcement officers But now Decryp Example... The Laboratory has bornwed a tack from metacular habology to produce a bornhouse the bits ingerprins from a be works unables of earthrans

Saundors, who sured on a development was development and a subcortex of the sure and subcortex of the sure and subcortex of the sure and a subcortex of the subcortex

Intel technique works even ca nauch unocopier ative surfaces as plastic bags and the achieve cole of type. This could spall bas news for drug disalest, counterlearns, and bombcrasy terromits who use these materials as tools of their todes. —HEL assess

Johns of the Puture

Leave it to good old American ingenuity to improve something noticity knew needed improvement—in this case, the humble foliet

There is the efforts of invertian Con-Hernky, ettricprenout Ed Smith, and CEO. Jay Martin of Con-Tech Industries, and the Industries, and the Industries, and the Industries of the Industries of the Industries of waters. The other reference at 145 as a creater for lay water. The been you find charace is the find and of as once the Industries of a charace site find and a charace site of the conditions on the Industries in the Industries of the Ind opportunity to save fifty to sevenly percent of the water used by your torist "

With up to 350 million balans in the United Status alone, billerins of galanse of water are needlassly fushed away each day, says Merin Con Tech's Thatric Fluet will be aided as lets to convert ordnary tolets, with a suggested retail prock of \$24 46 - _Tem Conkin

"The flush torial is the been of Western crivitization." — Alen Covit

"Civilization depende on people fealing anxous " — Abraham Zalezné



The best ever in the house is going to get butter. Improvements on the old standard will make flueting more efficient.



1975

of Street, and Add. (10). Shift of planet, State of Street, or



CONTINUUM



classes Puzzied that the cloorder has never surfaced in their family before parents Emett and Recene Twipo revestigate and disclaughter haid been accidentmmediately after birth Thu OWN

Although same cases like why a New Jossey company For \$200, nurses or doctors and store it for 18 years. If a preopier (except sterrisch) accurate says Michael Band, a spokesperson for

The DNA serroles are tais take at baris, says Baard smuckae or, if done impropenough for identification purposes. So far about 1.000 doctors across fre supply the service. Lifebank,

truth is multiplied later Antorio

THE AND THE AGAIN

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The biggest enemy of time capsules is time." sovia testory at Opjethorpe University in Atlanta, who four time capsules buried on capitol grounds at the turn locate these relice, Husbaco founded The International the whereabouts of the

began in 1878 when Philadelphans filled a sale with Gavi War memorafolia tate monohim should last at least 1,000 years, says Hudson -- Sherry Baker

"The first rule of existingent

-Paul Exich



CONTINUUM



Men are especially sansequating the loss of har with men, take heart An Colfornia, Los Angeles, han

doesn't work on men who are completely beld, but if percent increase in the reamber of heers occurried in

a control group. Petern caused by androgen hor thurner until the scalp slops producing her or makes keeps and togens from bind no at the root level

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"Those who cater to human wastly askion starve

There is still no oure for

Many colds begin when nasel pessages Steven D receptors. The scientists cold causing thinownuses Sure enough the ' decoy

cautions, "and we ve only tested against a handful of colds Shill we thick that ninety percent of rhinovirus

synthetic receptors be used Our setplatic idea at this cont save Marthn, "is to these receptors. The spraw spray and several more veers for the FDA to approve -Wil Durant Its use -- Bill Lawren

passage for millions of football pok who farned? Or to become a veteringenari?

'You would sait be foored says Pat Graham. who founded a "dissection

ter Jennier toqueed national dissect a frog "because she

support making models animal studies, or additional reports in place of dis-sections. "The important

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UNIVERSAL AND DISNEY ARE SPENDING MILLIONS ON ANIMATRONICS.

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WILL MICKEY MOUSE BECOME A HOLOGRAM? CAN ROLLER COASTERS BECOME SIMULATED MARS TRIPS?

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consection beauty complete with the resets of shares breach Poster adjuterestry of the plant and Poster adjust and the share plant and shares adjust arrange address to prove the interval adjusts.

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SHAKE, RATTLE, AND ROLL

The Viper churs 188 (net above Magic Mountain, reaching high in to the Southern California sky, Al. the track's surgrup, the roller coepier falls prey to gravity and abruptly giummets 56 feet at 70 miles coaster in the world Just when you think it's safe to calch your three times while searing to a heatht of 140, then 50, than 62 feet it coracre into a double barand within seconds, orbits upside burst of sadistic play, the train hur ties through a twisting contactive configuration, turning its passongers upside down seven times in two and a half minutes.

"The Viper is a reegacoaster with all the bells and whistles," onys Randy Gesler, president of the National American Coaster Enthusiasts Club "While other cossiors have just one feature---a loop, or a boomerang, or a borkscree--the Viper takes you through all these elements in the same ndo

Manufactured by Arrew Upnamce, the permit-finite coalable does million Vaper is belied as the most fightnern policy coalable on Easter Adap, Dise, may be table und least with a 196 root infall stopp-built doesn't have any herself-idopped, sternad-prabbing least. Indiad, in the Vapor has our anow standard for high-lach refer coalable. But do index outside a new standard for high-lach refer coalable. But do index outside an explosition of here outside an explosition of the heads worth more and designed are series to an explosition of the outside outside and here outside an explosition of the heads worth more and designed are outside to an explosition of the outside outside outside and here outside an explosition of the heads worth more and designed and here outside an explosition outside outside outside outside outside outside the outside outside outside outside outside outside outside the here outside outside outside outside outside outside the here outside outside outside outside outside outside the here outside outside outside outside outside outside the outside outside outside outside outside outside outside the here outside outside outside outside outside outside outside the here outside outside outside outside outside outside outside the here outside outside outside outside outside outside outside outside the here outside outside outside outside outside outside outside outside the here outside outside outside outside outside outside outside outside the here outside outside

Disney introduced the world's

first stars roller coaster, the Marterherru, in 1958. Designed by Arrow Dynemics, the coaster used logic system that kept the case maxim about ten seconds apart. By the Eightiss the industry had incorporated sole/state control systems, and new computer-centrolied saleness whether used.

Today's coaster despress begin with computer-simulate models to determine the effects of high speed and sudden force on the nd os, the cars, and the track's situative. Enginees can then bled coastors with the steepest possible mclines and the most sharply barried curves to create the theann of breatened in

Last June Antew Dynamics succostituity totat a fell size model of its latest dosign. The Pipeline Designed with dis wheat here name than beneath the cars, as is substrary. The Pipeline can perform snap rolls, benefinds, and other amplanties activation transvers.

"We can't all be avernaufic acrobats and skydiwars and race can divers buck wall seek adventuro," saya Paul Rabon, octor of Rolecoustrer" megazine "And with your heart pounding and your adresaline pumping, you are an exercital part of the adventure." Od

FICTION

see the town to be task deem accessible pilon of Shnare, it would be two days pourcy to while two incered to the other. While the lower stands, in the other. While the lower stands, in advance in the transition of a new soles urbondered Battere rear dirth the two with energit hands, the poor of most ments much advand by the cart low brock heat they call balled films. Four mention poor lower in the day a bard bear of the them select of the two.

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None of them had some the lawer betreen it became visible when they were still located any the set that set the stand of this, wavering in the eliminaning airs, damp to the most of mulrat was Bolydon bed. As they dow doaer, the cruat graw into the insplay of we walks, but all they saw was the to lower. When they of down their gatesit to the level of the invergalist, they saw the

tower of Babylon

BY TED CHIANG

A tower reaches for the vault of heaven, and its builders discover that the wrath of God is the least of their worries

> PAINTINGS BY CLAYTON ANDERSON





it takes a full month and a half to climb to the tower's summit

marks the tower had made outside the day. The Explosion and it row had any the Explosion and it row had any the explosion and it row had any the provide day for brids. To be examined of the day back becomes using the laders with load, becomes and the day and had been row using ones of kiking. As they approached the day back

longer burning. As they approached the city gales, the lower appeared more massive than anything Hislam had ever imag-ment a satisfic column that must Sire temple, yet it rose so high that it shows into investility.

heads talked back, soulnting in

Hildun's Hend Name of bowed him, avestruct

Coing up to dig. I seems, unnatural The minors reached the control gate in the workers wall where an ing. While they creed the appropriation ing abop the gate towers We are the meners who wore summaried light the

The galakeepers were do-lighted. One called back, "You are the ones who are to dig prough the vault of heaven?" Weater

The entire city was colebrating. The sort on their way, and would last two more Every day and right, the oby rejoiced, danced, feasted.

Mong with the brickmakers were the part gallers, men whose least were reped with muscle frem climb ing the lower, Each marring a onew beath its ascent they climbed for four days, transferred their loads to the next crow of pullots, and returned to the city with empty carts on the lifth A chan of such crows led at the way to the top of the tower, but only the bottommost celebrated with the arx." He leared over to thans. "How cty. For those who level upon the tow- ever, there is something they value er, enough wine and meat had been

Nami said "Someone lold me that

the briticitates who work at the test

of the tower wal and teer then han

will take four months to replace, but

no one takes notico when a man

Lugatum, shock his head, "Oh, no

that is only a story. There is a continu-

ous caravan of bricks going up the tower, thousands of bricks reach the

top each day. The loss of a single back means nothing to the backing

more than a man's life; a trowell

One of the more talkalive pullers,

"Why a trovel?" "It's bricklayer drops his trovel, he can do no work umit a new one as brought up. For months he cannot even the food that he exits, so he must go into dold that he exits, so he must go into dold that he exits. el is couse for much waiing. But if a man falls, and his trowel remarks. man are accretiv released. The next one to drop his trowal can pick up the extra one and continue working, with

Hillalum was appalled, and for a how many picks the mineri had brought Thon he real ized "That cannol be true Why not have apare how etc crought up? Their weight would be nothing that go up there. And surely the loss of a man means a serious delay, unless they have an ex-All of the puller

reaced with imughter We cannot fool this one," Lugatum said with much arrusement. He turned to Hilekm. 'So you'll begin your olimb once the fos-tivel is over?"

Hilalum drank from a bowl o heer "Yes for heard that we'll be joined by miners from a westorn land, but I haven't seen them. Do you know of them?"

Yos, they come from a land called Ervot, but they do not mine "We dig stone in Elam, top," say None, his mouth full of park

Not as they do. They out grante "Gearilo?" Limestano and ala ter wree quarried in Elam, but no grante. 'Are you certain?

Morohants who have traveled to Egypt say that they have appurate and temples, built with huge blocks

and employ, but with high bocks of imations and grante. And "troy carve giant stoppe from grante." "But grante is so difficult to work". "Lugatum shrugged "Not for them. The royal architects believes such

you reach the yault of beaven."

Hitalum nodded. That could be true Who knew for certain what they would need? "Have you seen them?"

"No, they are not here yet, but they are expected in a few days time. They may not arrive before the featwal ends, though, then you Elamene will ascend alone."

"You will accompany us, won't you?" "Yes, but only for the first four days. Then we must turn back, while you lacky area op on "

"Alty do you think us kucky?"

"I long to make the olimb to the top, tonce pulled with the highler creats, and reached a height of belien days olimb, but that is as high as Theye ever gree You will go far higher." Lugatum amiled nukluly "I only you, that you will buch the value of beaver."

To touch the vauit of heaven To break it open with picks. Hillium foit uneasy at the idea. "There is no cause for encound be becan.

"Hight " said Nann ' When we are finished, all men wil touch the vsuit of between."

The next monting, Hildum went to see the tower He shoot in the grant courtyard surrounding it. There was a temple off to one side that would have been impressive if seen by fault built shoot unrothed beaute the tower. He could sense the user soldly of 1. According to all the salar, the basic was continued to have a might storight her to organit possessed. I was made of based brick all the way brough, when ordenay aggunts were more au-dread mud toris, having based brick ordenay organits were more au-dread mud toris, having based brick ordenay or a bottome mothwhich solated into the the dock, and hademed to form a boot as all bridg all the bools threadens

The lower's base recentied the inclusion to pathtmm of an ontarily taggatal. These shock a galari source pathtme pathtme scene to handle source pathtme dubts no sole and tony cubds high with a spis she tage against it is out those. Stocked upon that feet platform was another level, a grafter platform was another level, a grafter platform was another level. A grafter platform was another level. A grafter platform was another level.

It was say out on a sole and marker a say which the on a sole and was the a say which a sole of the weight of basen. Accurd it would a specify writed at more, cut not be sole, that punched the tower live the lattice of the specific and the sole of the wing Not upon locking agent. Hilliam with there were should with place, or each ray were should with place, which behind them. In examp the come up the source he saw situation



bandh—samp, brick, nallig, brick—unbit tay could no longer be distingushed. And still be lower rose up and up, farther than the ope could sole. Hiliaum birked, and spurited, and grow dizzy. He sturbled backward a ocupie steps and tamed away with a shudder. Hisiaum thought of thestory tod lot.

Halawit Hought of the Stay Host to Health Hought of the Stay Host to here if the Davids Libid of how menhad crine again populated all the contact and again populated all the contact han have with about the startism of the start of the start of the men had calided to the edges of the week and content the start all the start of the start of the start have realized by each of the start have realized by the start of the start have start of the start of the start to the start of the start of the start to the start of the start of

This ways seemal hapma to the latm, a take of housands of mee toling oneoclessly, but with up for they worked to from faheath bably. He had been excited when the Bably(innare came to Sam looking for mixers '10' now that he subcit at the back of ha lowor his sense robalied insisting that orbiting should work as in his here.

Should he climb such a thing?

On the marring of the climb the second platform was obvered edge to edge with stoot two-wheeled carts arranged in revs.

Name verificated with nothing but tood of all allows avects filled with butage where, sense, sense of the were countings agent clarg jury of where, data wine basic goats mith, path of there can were loaded with such barrow weeks, need basites, both so furce, weeks, need basites, both so furce, weeks, need basites, both so furce, weeks, need basites, both so that they could not see to effort ade and wade not be within on the cirrly bay would be used into the within they weeks the basit fixed when they

Then there were the class loaded with the mineral packs and hearmers, and the makings for a small forge. Their foreinge had also ordered a number of custs be loaded with wood and shares of meds.

Lugstum stood next to a call, securing the ropes that held the wood. Hilaium writed up to tro. "From where

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NOTHING ATTRACTS LIKE THE IMPORTED TASTE OF BOMBAY GIN.



did this wood come? I saw no forests after we lat Elam

There is a forest of trees to the north, which was planted when the lower was begun. The out timber is foat-

would be needed to fuel the loins than oculd be found on the plain, so they and you'l switch every hour " who provide water and plant one new

corked a leather bottle he carned, and

puted by the minera were mixed in with those of the recular cullers, to ensure that they would keep the proper pece Lugetum and wrother puller hed the cart noht behind that of Hilahum

Топиндерационтонногоссо Унискистост помакон Уличения немли Уславные помле Станоссии Унискостонноссии

Remardser," and Lugebare, "strey all the pulling when you turn comers,

parts up the remo. Hillerum and Nenne They stood up together, ressing the

Once it was moving, pulling seemed to way around the platform. Then they to lean deeply "This is a light wagon?"

The ramp was wide enough for e angie men to walk beside a part if he had brick, with two grooves worn deep by centuries of wheels. Above their matched with a part. The men stood be- " heads, the pailing rose in a porthelact had soce loops for pulling. The parts i ranged in overlagging layers until they

met in the middle. The piffars on the ramp seem a bit like a tunnel. If one chefy't lock off to the sude, there was la-

"Do you sing when you mine?"

"Sing one of your mining songs.

As the shadows shortened, they ascendwas an intricate pattern of close-set streets and builtings deathing with overvisible as it seemingly drew nearer the

when he heard some shouting from the

upward ramo one level below He the side but he deprivement to interrupt called to Lugatum beford him

"One of your fellow miners fears the height. There is opposionally such a floor and cannot ascend Auther. New wesh to put the any further."

Hillington understand 1 We leave of a similar fear, among those who would be ter the mines, for fear that they will be

"Realty?" called Lupatum 11 had not

"I feel nothing ' flut he gleoced at Nanny and they both knew the truth You teel nervousness in your

pains, don't you?" whappened Narra coarse tibers of the rope and nodded "I felt 6, too, earlier when I was clos-

"Perhaps we should be hooded like

(clangly "Do you think we soo, will fear the

heads when we climb hiriter?"

Hitalum considered. That one of infact them all "We are morely unacountorned. We will have months to reach the top of the lower, we will state

CLEMON REL FROM SHAW CONTRACTOR FROM THEY WE LOOKEE HOW INCOOL IN

"No." said Neers "I don't trek I'll day whout modern

In the evening they stell ment of berto the body of the tower. When they evening when they met the second woke the next moming, the miners were scarcely able to walk, so sprewere their leas. The pullers laughed the certs to reduce the miners, burden

wind blow steedly at the herofit and one had ever been blown off the tower fall, a man would have time to say a praver before he hit the ground Hilalum shuddered at the thought

Askly from the soreness in the menlines of insects. No other miner leared

like a coppled old man. Only on the fourth day did their lega feel better, and they were pulling their original loads ngein Their chinb continued until the they were joined by the comdons

taked and are together that recht The

more times then any man."

Nanne "No, because every time & reaches

down 1 could not bear to do that

When the second crew slopped at the hind Hilalum and Nanni came over to

the height Come, look ' The puller legs hanging over the side. He saw his feet. He lay down on his belly, with only his head at the edge. Name them fester than he could bink end

When the sun is about to set, look gishoed downward and then quickly

Consider when the sun sinks behand the peaks of the mountains to the Time, he knew night for what t was the

"Take care of your cart it has west, it grows dark down on the plan shadow of the earth itself, cast against of Chinar Val hare we are hinter than the mountaintoos, so we can still see

Hillalum's raw dropped as he undermark the beginning of night Night fells on the earth before it does here

to the sky. It moves quickly, but you

the base of the immonse piller, the Bab-

Hillslum rolled over end looked up

Hilslum seid nothing. For the first

Aber climbing for two more dawn. Hilalum had grown more acoustomed to the height. Though they were the betthe two is must come all the way back shoot. The sharkness of the mountains the part of a leasue structure up he ramp and look down the tower. He upward. He noticed that the tower no ionate looked like a smooth pillar

to widen further up. How can that be?" Look more closely. There are wood-

sative. They are made of cypress, and Hilpium souldted "Belconies? What

"They have sol acreed on them, so most commonly grown Higher up,

rain above that does not sust fail

Kudde was surprised at him "It dries in the air as it falls, of course " By the end of the next day they reached the level of the balconies. the lower wall above, just below the

or had several narrow rooms inside, in weys sewing turics, or out in the gendens diagon up bubs Chidren chased each other up and down the ramps, weaving amidst the pullers' carts and running along the edge of the balcones without fear. The tower dwell-

much food and other goods were tak-The pullers greeted their families and invited the minera to ion them for the gvod a tine meet of dired fish, breed,

Hilalam sew that this section of the tower formed a triv kind of town, laid fastania were performed, there were manustrates who settlard manutes this was a knoth of the traver To lonis shar radiance director like the two of

there were shops, which were stocked ther could exist without the other. And ney, a thing that began at one place and ended at another. This town was

After dirper, Heleium eeked Kucida visited Babylon? Kudde's wfe, Alitum, enswered "No

You have no desire to actually welk

Kudde shrugged "We two on the road to heaven, of the work that we do is to extend it further. When we leave ramp, not the downward.

of time there came the day when the the ramp's edge Below the tower's sheft shrank to nothing long before it seemed to reach the pion below Likeup or down was frightening, for the reground. The lower might have been a

here were moments during this sec tranged from the world, it was as if the him He wished Yahwah would give e sign, to let men know that their verture Se welcome to the spirit?

The townr dwellers at this altitude ways greated the miners warmly and verift. They loand mayle the clamp mate theil this was an improper place for men to be There were no dryine assur ences to be had, but the people never knew a moment s doubt With the passage of the wreks, the

Protecting freedom takes hard work. Dedication. And sometimes socifice. But the rewords ore areat. Knowing that you're doing something important for your country o sense of responsibility and occompl ing you believe in. Stand Up, Stand Out. how you can serve your country, contact your local military recruiter today.

S. ARAMA MARCES

Stand Up, Stand Out.

Yokweb peering at them Belore long, they were at precisely the same lower as the moon when it passed, they had reached the height of the first of the bissful bodies. They expertial at the moon's pited tace, marked at its state within their scorred any support

Then they approached the sum it is wait to autrim souldow, there it is an intervent of pass closes by the lower at history of pass closes by the lower at history of pass closes by the lower at history. The lower has a pass close of the house, nor were then any balcools and the lower house house and which would have solahoud and lower build by which had been waitneed to house, which had been waitling in the only prevailable. The parts the only prevailable in the lower do been widened unit i they formed a newly cools in (at). and balades of cools in (at).

The enswer of publics that been spaced very regularly at the point, but here an adjustment very increasing they started out autilier and canner each morning to gan more derivers to when they publick When they were at the weel of the sun, they taxeled ontrety at right. During the day, they tred to deep network and answering in the hot brease. The entretwine worned hat if they did manage to skep, they would be baland to death before they askie. But the pullers had made the purney many times and never loat a mar, and exertually they passed above the suns level, where things were as they had been below

Now the light of day shone upward, which seemed unnausal to the utmot. The balcontee had plantike removed from them so that the sanight could share through, with sol on the walkways that remained, the planting grow solways and downward, boncing down to catch the sum staw.

Then they drear ends the level of the stress, mini-livey schemes approval on a code. Histour has expressed that to table. Histour has expressed that to have been approximately approximately they ever and aims at at the same harger bain instand accounce the next free reagest above, these of touch to no naccount of the state. Jobs accounter dry one would merica table approach, evidencing is assessed in the approximately any one would merica above approach, evidencing is assessed and the approximately abuve exact and and the above to abuve exact and and the above to abuve the above the above to above the above to above the a

During the day, the sky was a much paler blue than it appeared from the earth, & sign they were nearing the



vesit: When studying the sky. Hilakum was startied to see that there were stars withle during the day. They couldn't be seen from the each aendet the glane of the sun, but from the abtude they were guite distinct.

One day Nami came to him humedly and said, "A star has hit the tower?" "What" Hillaim looked atound pan-

cked, feeling like he had been struck by a blow

"No, not now it was long ago, more than a century Dee of the tower cleekors a telling the story, his grandather was there."

They went made the comdots and saw several miners scaled around a vizened old man. '--lodged itself in the bricks about half a league above here thus can still see the scale is left if's like a caset sociement.'

What happened to the star?

"It burned and sizzled and was too bright lokosi upon Mini considered prying it out as that it might resume is occure but it was too hot to approach closely, and they dared not quench if After weeks it cooled into a kinittad mass of black heaven motel so large as a trait cooled who he areas accurd.

"Boliarge?" said Narra, his vote full of awa When stars fell to the earth of their own accord, small lumps of haven matel were somatimes loand; togher than the finest bronzer. The mesal could not be methed for casting, so it was worked by harmening wash headed red amulas were mede from it.

"Indeed, no one had ever heard of a mass of the size found on the earth Can you imagine the tools that could be made from it?"

"You did not try to hammer it into tools did you?" esked Hilalum, homfied

"Oh, no Man ware frightened to tauch it Everyone descended from the lower withing for retricition from Whiweh for desturting the workings of creation. They wated for morths, but no sign came. Eventually they returned and paid out the star it sits in a temple in the oth below."

There was stance. Then one of the miners said, "I have nover heard of this in the stores of the lower"

"it was a transgression, something not spoken of "

As they dimbed higher up the tower the key gree higher in oddy, und one morning Hillium awake and good at the edge and yeals from shock. What had before seemed a pais key ow adpared to be a white oaking stretched far above than tweets. They were close anough new to potcher the wall of heaven to see 4 as a solid carapose exclusing at they by All of the means account of they by All of the means account of the the tower over order to havened the the source overlap. As they continued to climit, they were started at how new they actually were. The blarkness of the valid's then had decreved them, million of underlatesicile until it appaared, ablighty, seemnghy just above their heads. Now instend of climiting who has day, they climited up to a featureless plain that see they decretely an that see they decretely and therefore.

All of Heldum's specse were disprenter by the sign of it. Someomes, when he locked at the voult, he felt as the work) had flepped around asometrax, and the tot his found have well did appears to need when the voult did appears to need when the flexibility well as isoftabric as heavy as of the well as isoftabric as heavy as of the heat for the found when the need in the mores that the cealing would collepse upon him.

Too here were monotoris when it appeared as it would read a vertical of those of unmagnically herein the behavior before it m and the data such behavior the same data does not an instant it was a cable extend as a behavior the two of weard of all for an instant is doesn, and his body, and not doesn, and his body, and not here of the body and the here of the instant catagood the instant clutch the brick foor

Name and many of the other manes went bysavyers, too though no othe spoke of what disturbed their deep these theorigeneous consist of the their sport operations and the sport the spirit of the weat respect on topolothe spirit of the weat respect on topolothe spirit of the weat respect on the weat broged by leng under with conditions, doit hey access matches? The hey great accusations to the 30 feature the spirit weater and the spirit flat of the spirit of the spirit the spirit of the spirit of based the spirit operations to the spirit of based the spirit operations and the spirit of based the feature to the spirit of based

Parhaps men were not meant to hvo in such a place. If their own natural restrained them from approaching hearon too closely, then men should remain on the earth.

When they isabled the summit of the base, the dosceration fields or purheap they had guaran means him. In this, the means gated upon the most assessme scree were glinplaid by and assessme scree were glinplaid by all desclares them lay a tapeshy of sol and sea, velosity mit miling out all desclares the limit of the opilast absolute to the limit of the opilation of the solution to the opilian to the solution of the solution to the opilian of the solution to mit of the solution of the opilian to the solution of the solution of the solution to the solution of the solution of



could be apprehended at once

The prests led a prayer to 'birtwe's they gave tharies that they were partitted to see so much and begged forgive nees for their dearte to are more

Hare survival the brokkayers, the minismainar with businen who mixed the motar and defly out the heavy bicks with statucity proxime. Many bicks when they size mould not permit burnshess to supprender doctamise when they size the suit. For the Xwer could not very a finger is with from the vertical. They were rearing the end of the tasks, finally, and shift nor morthe of alimpting the minos were ready to began thems.

The Eggstains armed storty aboward: They were dark of sion and sight of build and had spennely beared runs. They had public darb filed with iddenta hammers, and bonza tools and works the Elanited forman. Final with Biol. the Elanited forman, final with Biol. the Elanited forman. The Eggstains built a toop with what hey tab beards daring the bonze took films for recearing the bonze took films.

The value fuel neuroned parts above a mass supervised supervise. Yes based on the second supervise, Yes based in the second to be made of the generative supervised to be made of the generative supervised supervised supervised to the second supervised supervised supervised based to be setting and the second supervised based supervised super

It is also that there tower met the valid at port between any networks, which was instruction model of a subcotage that any second or subcle. Here, would have bed to not belowing it open and instructions to be reserved. These would be preserve that the writer reserve is any of the same shoeing along the Euphraphic chars that model below and when the trans would model likely and when the

45 C5/N
reservor was emptied, but there was always the possibility that Yahwah sain until the tower fell and Babylon was dessolved into mud

Even though there were no verble gates a nak still wested Perhaps the gates had no seams perceptible to marwere duce, so that even if the nearest s) are unles who many inscuss new

There was much debate over how

the tower around Gurdusa, one of the or Yet in all the centuries we've been working we have present the sighteet sign of Yahwah's displateure Yahweh will drain any reservoir before we

If Yehweh looked upon this venture with such favor, there would already be vsult," countered Eluts an Elamos "Yohwith will nother help or hinder us if we

Hilalum could not keep his doubts a lent at such a tros." And if the weters us but Yahweh may allow us to bring

"Elemite," said Qurduss. "even as a newcomer to the tower, you should know better than that We labor to our love of Yshwsh we have done ao for all our lives, and so have our fathers for

It is hus that we work with the pur have worked wavely Did men Iraly choose the correct path when they opthas Yahwah said that the choice was water iss above up. If we are measured

"Hilalum advess caution, and i some,' stud Reb. 'We must ensure upon the world, nor even denotrout with Sermut of the Egyptians, and he has shown me designs which they can provide us with safety when wo

The private sectficed the or and the goat in a ceremony in which many sacrad words were apoken and much



Even before the miners reached the wait, it had been obvious that simple digging with hammers and picks would be impractical. Even if they make no more than two know writtle of progress a day through grante and turneling upwardwauld be far, far slow or instead, they employed are setting

With the wood they had brought a day Before the heat of the flames, the stone czacked and spalled. After letting water onto the stone to further the crackma. They could then break the atoma inthe tower. In this manner they could propress the better pert of a cubi for

The tunnel did not rise straight up. but at the angle a startckie likes, so the left he wells and foor smooth. The derioot so that they would not slide back down They used a platform of baked bricks to support the borfire at

After the tunnel rose ten cubits into aned d to form a room. After the miners had removed all the stone that had been weakened by the fire, the Envotians began work. They used no fire in their guarning. With only their delefter balls and hammers, they began to build a silding door of granite. They Hilalum and the other miners lined to help but found it difficult. One did rult wear away the stone by grinding but instead pounded chips off, using harmon

After some weeks, the block was ready it stood talks than a man and base of the stone and pourded in dry thinner wedges into the first wedges to sold them and poured weber into the a low hours, a crack traveled into the

row upward-simplic comport and in the they dup a downward sloping channel across the floor immediately in front of the entrance and ended ust to its left

the block of grante. They dragged and CONTINUED ON FROM NO.

HIT JAP CE YROTE AUD HIT JAP CE YROTE AUD HIT JAP GALOLXOI TEAARO HIT JAPARA BO CHAL HIT JA WALL OF CHARGE KUNDION HIT JAPARA HIT JAPARA HIT JAPARA HA NO 2U HIT JAPARA HA NO 2U HIT JAPARA HA NO 2U HIT JAPARA HA NO 2U

TTHOE







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AN INCLUDED HER NO NEWS POMISTO EL M BEALIZS TWO IST CALM IN THEY WELOW AND THE ABYSS HAS PSEPARED HIM FOR A DEVELUTION IN ANIMA-TION IN THE REAT SOME ET ANIMATED FLARFEA AGENY WITH AN UNDER-INDE ACOMUNIC TONE BUT WITH THE AGVENT OF REASONAGET THE SCALE CTO HAVE ADOPTED A FREER, MORE DIRECT STYLE AND FOR MODULES. TICK CREAS THE DOCES HE SAND

a second











THROUGH THE USE OF SCENCEFECTION THEMSE I CAN DEAL MODE DEPECTLY WITH THE ROOTS OF ANY PHE COSPIRACE DESCOLLENTICKS' ADDS GRAUD TO BE CONTINUED, -KELLE MONAUM





Will those who expose fraud in science be tomorrow's heroes?

BY JEFF GOLDBERG

B) GEPT GLADBERG In the cell bit mights, cancicat poly, there might before a hear. That persons may be approximately the set method of the set of the set of the set of the design of the set of the set of the set of the design of the set of t

PAINTING BY BRAD HOLLAND

a nine a potooneachar. He

LOUIS CLARKANDHIS

ARE NOW FIGHTING BACK

- ----

noved and a maker. During the darker

time the was to leastly. Having fold the trafty Addreson now learned for his life Addreson and Benjaky worth sizes







ward balancing my deplotable take and give take short." Across sh, it is the conviction and de-termination to see pushes done, even at the set of enterine personal heridologic field has begun to feasible where witholic blows. gamba vegetightest artis

Lassy, however, the has begin to change so white blowers join ranks with leaving, legislators, and other concerned inchritikatis in intervised of mutal support here process wersel introtion on verse ago by Ball Blach Affough he go this and services tank and salary resized after three years of appeels, Burk was chere is windbalkies. oftice and a pit without regionabilities With little elevis to be began clipping newspaper and megative escopator of climatives of table opperances similar to has own. Evortually the complete a little that would become a central clints backers an effort to organize with thiss backers an effort to organize with thiss backers and of Ubderground Reiroad for whereis-blasers in their efforts to escope nations and gain indicabon. His lot of names now numbers more then 8200.

For many-white-backware to be tor oruper hery first to a Schemis home of home in the subarts of Lacer Maryland. In the subarts of Lacer Maryland, and of documents weather than the physical burden of Lacera to prove harys sailing that the accessations way but home extern the physical burden of Lacera to harausoft for doing what hery bounds was the right final. Scheme and the right final, Scheme and her was also porting torm in Juli men and that inmore also pad the low and Them I webwide caused it. The final headthe caused is the final pole

In the process of helping whistlebixens Socien became one himself in 1976 as a U.S. Public Health Service employee, Soeken administered mandated "threas for duty" earners to government employees who supervitions alleged were mercially incomes tent. "The majority of the people ordered to take the earn were whistleblewere who had been transfer to be plant with authority problem. Indials," Sociennecals. "Its, they dollare problasm with authority, and year, they alwe had the but it was because of what hoppered to them."

In 1984 he testified as a kay whose at congressional heatings that eventually led to abolishing such exerns for federal employees.

Brind than Booken has been done, ing coping statutingers exercise rogmens, user reliablent techniques to while level stress and heig get whistle blowers bank on the feet. In the scrutzary of the dare as the scatcal of the Vithtie Stag, a bank com house he martines for the clients in the machines of Wed Virgens, Booken encourages than to be the clients. Devices encourage that the maked the statuting of the reliable the scatcal participant of the scatcal temp statuting and parts. The says. "The next bank to be them a code there."

In the tight to writegal rights and protectors to whistlia-blowers, Wachtrotor, DC, atomay Losis Clark is the manwho has most often chartiplaned their passes in ocurt and on Capital Hill. In 1975 the Termer Methodest seminarian creativities you are to:



ta blockers, which prevent heart attacks and reduce high when he discovered crmetid-

Incurable mental accentific approach to phardrugs," says one colleague, That behave like a rifle buildt inverge of producing his third mapr discovery, the 1968 Nobel asy about himself. "I am addictblood pressure and egain ad to modical chemistry light high on it "At sate-tix, Flack a ine, the active ingredient of a deeply private man who Tapamet, for treating scena rosists speculating in public Black is welaty acknowledged about the motives behind his to be a founder of the modern research. We do know he did

PHOTOGRAPH BY JAMES MERRELL



INTERVIEW

"Find me a man on the street who doesn't take drugs," says a Nobel prize-winning pharmacologist who has-unwittingly-earned more money for pharmaceutical companies than any man on Earth





reduces at St. Andersen in Bostland, timen stopped out to Singatore to teach physiclogy, And at the Universe by G Glasgowher speri light years daweighing the data that revolutioned any through the We involve the timber data of short attack following a fartice any of the standard by the start on the start and that Back's early appendix and that Back's and by propertised by eventue and strong environ

Bigst know screen heat rhytm a meminent by swing goud of popularurable. These are imply comoted by going and the set of the set of the intervention of the set of the intervention of the set of the heat of the heat in a constant for basis of the heat in constant for the set of the set of the operations. Lack of anges insolving the least as a smith of the heat of the heat in a smith of the heat of the the heat of the set of the heat of the heat of the set of the heat of the heat

Bio gapes of advergence mostlass, to be adverse to the three tests of the test of the tes

Propagando, sole as indeni was a gold anno for 105, naking the company bifers of dolars. Black hemaelt reaged life transcal arosaid. Hemaelt with tack around to recover the acocidate bud get to work for a compatitor. Brith, Kine and French Laboratonos. Lid Havaid make 9204 \$3 bittion a year by cloveboorg Tegamist its beniseling used data

Black discovered cirretidine by following the same line of reasoning he's used for bains blockers. After isolating the receptor that produces excess garting higtomine, he engineered a bormone extensiones the blocks as uptake in the stomach, thereby bimging relef to minora of paptor ubor sufferers By miniders pite homoral count of hutarmen, he of hup-clud one of the body's commark-counted applies. Once again his "invarted resity" theory had provedright fluid in 1912 Black was out again looking for a job. He explains this pation as defense against bordom His interest is in reasacting how dugs, not promoting them safe

Today to feast the oppertunit of aniptical phreecology at the Univerany of Underse and Dentsmy and Alecci thread tensors and the Univertion of the University of the University Johnson & Johnson Hins only require locations as tensors for the years by Johnson & Johnson Hins only require to obtain a standard the the time and of the University and the University The University of 20 cotext space and 20 cotext space and 20 cotext space and 20 cobact space and 20 cotext space and 20 cotext space and 20 cotext space and 20 cotext space and 20 co-

 It's not my fault people have indigestion. I refuse to take the blame for that I didn't set out to make the companies visat fortunes, but to solve the problems I saw in front of me.

entets he has forbidden his foundation to grow beyond this number and guaranteed its neystly income will go to support other small groups in basic medical research.

Thomas Base met Bri James (between kinghes in 1987) at his King's College effice. Warned that his subject could be difficult. Base was nonetheless nurprived by the taske the at instal and/of the interview after the first queethor. "Where were you boot?" This was not an ide query consolering the variety of teaceant, a cond-

 Ottax. What clues have you discovered recently for making new drugs?

Black Three's no way I can keep some of what here produced to the product of the product of the product of the product of the some of the product of the some of the distance of the dis

Densi: Have you ever discovered drugs in your dreems?

Things: I carril three no. but I have a characteristic of the second sec

Ottof: How do you propose to reduce reflicency in the drug business?

Biad: L'adri warit lo trock en notme 381, biurnitary descrit de model me 381, biurnitary descrit de model beerdon- metalet trait store trave segurination et descrit fait store trave segurination et descrit de store traves estat her to pel a product la product be right toch behind be stere pil Untertained the store her to be a person and be stere pil Untertained the store installate pil Untertained the store installate pil untertained to metalet and the store and the store to metalet and the store to and the store t

Taid Dae toky teky direct Ddevelopment-in transfer give you want begind directly you level to Col and togo and directly you level to Col and togo and directly you level to Col any porter by service weeks you like to pay porter by service weeks you like to the The development process to weekprogram, keining and putting Birth microcreatible togo can meek reweek away and larse in Bootone in weaklight weeks week and the togo like togo and larse in Bootone in bloom Reasement the to be constrained make util and the more information. will become You'll kill the oppose. The have room to express thermalives but

didn't you have a violent argument

There is a possio machine out there con-I lose interest in a project as it does go to symposia, falk to visitors. Fd soon d hennen to others, like James Reeproperties of halothone. By accident other company, and they were looking paper ICL understanciably was disenviolence disagreement, or argy-bargy Overs, Had you staved would the com-

Black How can Lknow? I tred to fiv the

idea I didi'i throw fantnums about it. This pela manead as if they were putto do someitano else. When Im m a compassionate. But I think that's always been accepted, and my behavior hea stepsty of the company At least that) how it seems to me. Maybe others

Omst Where were you born?

Black Addresson, Bostland in 1924 with mines. Whit Addresson was like back I was one of five boys Now what conclusion do you draw from We don't have lunation in the tamily of anything We That.

Ornet Duliness can be revealing

Black I don't particularly want to pub-

Black Do you mean like crack? What pain in the head, I lake an experit doesn't fake drugs Remember my

Omni, Why did you do physiology

Black. I was interested in physiology 1 pen it apuid here been me about hin years to pay off my medical school debts What does every young Sochish work to Singapore, where I lectured in physiology at a colorval medical ing from my mistakes. So in that

Then I was about to be a father roci again desperate no money, no pb no vited me up to something called the University of Glaspow Weterinary plogy department from scratch. So really, as a vounceler, I got free pitch to ology you can't be stanterested in anmais. The basic assumption in physicibe in its periphensis, but like motorcars. the combustion engine is still whet it's



IF YOU DRIVE THROUGH SOUTHERN INDIAS DRY, DUSTY HIGHLANDS, AN AUS-TERE PLATEAU STREWN WITH BOULDERS AND TAWNY BUTTES YOU CAN WITNESS THE CREATION THE EVENT ATTRACTS MILLIONS TO PUTTAPARTHL ONCE A DIRI POOR TOWN OF MUD HUTS THAT'S BEEN CONVERTED INTO A CROSS BETWEEN THE VATICAN AND DISNEYLAND. HERE HINDU FAKIR SATHYA SAI BABA "MATERI-ALIZES" OBJECTS DAILY. THRONGS OF FOLLOWERS SIT CROSS-LEGGED IN FRONT OF BABAS PASTEL-COLORED DWELLING AS THE ORANGE-ROBED MONK MOVES FROM ONE BELIEVER TO THE OTHER. HE MOVES HIS HANDS IN SWIFT DEFT CIR-CLES. SEEMINGLY PULLING A GRAY ASHLIKE SUBSTANCE FROM THE AIR. THEN PRESENTING A RING, PENDANT, OR CANDY TO EACH VISITOR. I WAS HOPING FOR SOMETHING MORE DEFINITIVE - LIKE & BASKETBALL - BUT ALL LEVER GOT WAS SECONDHAND ASH, IT'S PROBABLY ALL I DESERVED



PER SOUARE MILE THAN ANY OTHER COUNTRY ON EARTH. ALMOST EVERY TOWN HAS AT LEAST ONE MAGICIAN/HOLY MAN WHO CAN PURPORTEDLY MATERIALIZE OBJECTS, WALK ON WATER OR PERFORM YOGA FEATS LIKE STOPPING HIS HEART YOGA WHICH MEANS "UNION." IS A SPIRITUAL GOAL PURSUED

THROUGH AN INTRICATE COMBINATION OF PHYSICAL POSTURES, BREATHING FX-ERCISES, AND MEDITATIVE TECHNIQUES. THE SUPERNORMAL CONTROL OF THE BODY THROUGH YOGA HAS CAPTURED THE ATTENTION OF SCIENTISTS WORKING ON THE YOGA AND CONSCIOUSNESS PROJECT AF INDIAS NATIONAL INSTITUTE OF MENTAL HEALTH AND NEUROSCIENCE IN BANGALORE. ABOUT 100 MILES SOUTHWEST OF PUTIAPARTHI FOR THE PAST TEN YEARS THE INDIAN GOVERN-MENT HAS AMPLY FUNDED THE PROJECT UNDER THE DIRECTION OF NEURO-PHYSIOLOGIST T. DESIRAJU, INTERNATIONALLY RECOGNIZED AS AN EXPERT IN SLEEP RESEARCH. DESIRAJU DESIGNED THE LAB TO EVALUATE A FEW OF THE STAGGERINGLY DIVERSE YOGA PRACTICES. WHEN PUBLISHED THIS YEAR THE RESULTS OF THE DECADE-LONG PROBE ARE BOUND TO CAUSE CONTROVERSY.

INDIAN SCIENTISTS CLAIM THE BANGALORE LAB IS THE WORLD'S MOST SO-INDIA HAS MORE PRETENDERS TO PARANORMAL POWERS PHISTICATED CENTER FOR INVESTIGATING MYSTICAL EXPERIENCES THERES A BA CHANNEL ELECTROENCEPHALOGRAPH MACHINE AN ELECTROCARDICCEPAPH AN ELECTROMYOGRAPH THAT MEASURES THE TONE OF INVOLUNTARY MUSCUR MOVEMENT A STETHOGRAPH TO MEASURE BREATHING, A POLYGRAPH FOR GAUG-ING 5KIN RESISTANCE TO ELECTRICAL CURRENTS, AN ULTRAVIOLET DEVICE THAT DETECTS PERIPHERAL BLOOD FLOW, AND A HOST OF OTHER INSTRU-

THE MECHANICS OF MYSTICISM

india's boly men perform supernatural feats that defy explanation-but for how long? Scientists are working to unravel the mysteries

ARTICLE BY PATRICK TIERNEY



Reaching a state of higher awaranass doesn't require a mystical journey to India or a mountain-dwelling ours



ments Together they provide a consteltaily soundproof room lit by a kw-watt enough space for subjects to stratch do voca exprcises, or he down Bethere are no cumbersome wires to make the mystics uncomfortable

Enticing advanced practitioners into a laboratory, however, west t namy Lin-Ike Settus Sa Rabe traditional voias abde by sinct rules aganst publicly displaying their powers. Many of these dumps, others merely walk from place to place without plan. One of the most nanda Yogi discovered and first studed by Rai K. Acend at the All-India instiwhere Desiralu formerly worked Anand heard that Remananda Yoo was werdering around, digging holes in which at a time-as an exercise in reducing his oxygen consumption '71 you can meditate in those pits, you can meditale in a box at our restbule. Anand

Previous pages Lond Skitt Hindu and at destruction and regonantion. American direclass and they son Above Local souverse shop Page 85 Placebovers in an achieven

and the veneral networknown Altermuch pleading, Remanusinda Yogi sccented the metation

The 'how' at the Al-India Institute was carefully designed to measure have could survive without a lettel buildup hour tests he cut his revent intries to about half his normal rate. Although of physiology 4 was less remarkable that the fact that his metabolism didn't would become labored with this space," Anand save

Pertage the most surprising discovcity of real yogs talent. Many yogs clear to actemy a spiritual state that tocalled nivikalps satisful self consciousness without any object of percentron But examining 100 ascents with self-growed mediator mastery duce uninterrupted siphe waves a while being subsicied to prioricks

According to classic yogs literature samada is accompared by a casta er mediuntery body functions. Ver Demyanc successfully brought his heart to breathing. So far no one has been able

Indeed, the Yoga and Consciousness Project learn has been unable to so-called enlightermant. Even meditaton has proved hard to define. This is studies proneered by Hervard cardiol-Kech Wellace. These researchers put meditation on the medical map in the of Physiology, TM's appeal has largely tris or melodious sound. Anybody cer learn the technique without retiring to a cave The results, moneover, have

TM Reason and Wallace reported tion and heart rate to jovels below time electroencechelograms registered suggesting both relaxation and heightened awareness Subsecuent stucks at Hervard confirmed that requier pracduped anxiety as well TM research soon led to a quict health care revolueven incorporated TM into its automauti training program

Bur iranspondental Maritation may have no special claim to tame. Apart from a few super-yoos like Barrenonined 50 subjects including rate samer TM teachers, as well as exports in tator sal for at least 25 seasons. more than most previous studies required Among the general lindings Meditators' heart rates are as likely to increase at decrease, while breath rates and that eccentric Based on their early results, Dwarmu and B. R. Kanchan reported For Westerners, TM has proved to be the most effective technique for reducing stress and lowering blood pressure 9



that "TM subjects often lapsed into drowny states during both modulation and normadiation sessions," whereas "the alpha power of the TM subjects showed no separaticalit change."

While meditators generally reported local passed: the physiological comister were constantly unprisidable individually, motobasis showed great physiological variability train are asaren to the next Practitioners of the area to report the displant, though these were droweder and their aware, according to abstracts of the Buggator oxides

Torrespect years we calleful barwer the unspectational werter getany," one index adjusted comments and the set of the second set of the geta bar in helping lash practicover read-his or har own hermory in accord with the robustion lands, adjustal. Ho nor media are alies And to yeags bar to the robustion will change in the serve way, "bags will help normalize potendor set of the physical particular bar ways will be normalized to the output of the physical particular bar and the set of the physical particular bar and the physical physical particular bar and the physical physical particular bar and the physical physical physical physical bar and the physical physical physical physical physical bar and the physical physical physical bar and th

TM sciencists, however, are some what skeptical about the proliminary Bangalore reports. "Only a few TM individuals were texted in this study," says

Charles Alexandor, a Harvard-Itsined professor of psychology at Maharah International University (MUU) in Eartfeld, Josa "Itou can't draw reliable inferenos from that small a tempte in our abuest involves (Plastiandi of pacolia in more than teamy countries, we saw por the differences".

Appendix points out that TM research new comprises live volumes, with a total of 37.00 page encompaceing 430 studies. The most systematic workhas been on TM, leaving other techniques In the dust," another TM toxietiet rags. "There is bound to be some here failence about the '.

According to Robert Schreiser, a Unwenty of Michigan calcivaluscut physican who directs MUS Laboratory for Medith and Aging Shudies. "There are mote-enalyses that compare published sculas of diffuent tochnigues as opposed to unpublished impressions." They show This levice as difficulties as other highlings in such areas as the physiclogy of tesses, including respiration rade and blood locate".

While at Harvard Alexander reacted some 70 paciple at legit Boston numing homes. With an average age of eightyces, each subject was tandom y assigned to not of four factors, relation, or engine string electrices, and of the The oroux was tall levra 1. Alexander says. "The other three groups had soly-live to eighty-terrier and a help provide tanked take. A conpresent group of four hundred severity all near table disubject had a territal rate of terriphene partiant. One kay takes the table of terriphene partiant. One kay takes the table of terriphene partiant. One kay takes the table of terriphene partiant. The table table table of terriphene partiant. One kay table table of terriphene partiant. The table table of terriphene partiant. The table of terriphene eight, resource the other hand table of the table table operation."

Descay also reports that midifiation heppe practitioners achieve loss stressstal, heather leves But hits to-called homeostatic balance varies according to the individual, and TM is not directly responsible for bringing it about

Its difficult to release the conflicting stones coming from Bangabre and the TM assabilitioner. The sheer volume of TM iterature is impressive compared to Desinguit asimplia. Yoi Desingui gave each meditator far doser sourcy then the original Welson-Berson experiments, which also showed small inverse of schards.

"Even so, if strange that the Bangaber, data should be to discordant. To pasake, however, that outral offerences may account for the physiologcal interruptions. Avaid suggetto that "This may have more striking offocal on Veteterness than on Indiana bocusas Westerness are highly stratead, while incents are allocated rolload."

Despite the controlverty, the Indust group the togeth and the State Of the modulation datagoar. There has been presigned under the state of the state presigned under the state of the state and the state of the state of the state and the state of the state of the state and the state of the s

Weller Harmst, president of the hasbase for Noeth Sciences, put the contraversy in a different perspective. A sigentiate at the Scientrica Naisacción (Noctub) in the Science Net perspective. A sighi teracture, he binartier of the scaulible with a waive of his hand. "The cousben with which is science on validate meditator, but whether meditation can which the former "DO



FICTION BY GARDNER DOZOIS

Alien and I were cousins, and we grew up within a few blocks of each other in a sleepy, sleepy reighborhood in Mount Arrey. We were never close---st first, he didn't

seegy regrowthood in Morier very we were never crows-all field, No GMM like grifts, and two likes when his dis cur consumptivity causals his to sold itservices for financial comparisonary—but we awa a lot of each when "constants", is constrained budget, although there were lines when Admin could be channel and another ing, even to grift like me—sepacially if there were grown-upd actual to watch it was a mixed, blackbib chits, cut collocational programets, the sect of chits' who it with the was a mixed.

PAINTINGS BY ÉTIENNE SANDORFI



clearing the fish At school he to get out of boring assem-

bles or bugh classes. He had to go to cheer company was having to find the "smiringest out of a math class he didn't want to take. He fensos that would have meant suspension for ofter kdp-but Alim pot put of it. He even

coupin with doom-attrough with these to no greater expant

centeration were doing-but he out out of a book he had to go to-get that one-the around school that he'd ooten a get prep "Best Smile" competition, which a bothpeeter mark, that there assa poon to be a shoroun grif moved out of state and was never heard

a comic works a audience. What he was best at, though, was petting

aut of things

but a few years later we were both being neichborhood, and we traveled in roughly more, until my husband and I moved to Corin our family, Alian got out of them, though pus Christi, even then, I had enough contacts we back on PHUs to ensure suggesty as counter to to what we going on this lives like The men was no different tions have by the back managed to any to save para. and then, it also very any to save para. and then, it also very to be applied to the same to the back to be an ensure to the counter one backet the more back management. In we accept, and the different to the all services and the counter to the same back to the to be left.

It must be understood that in many way. After was not, an assignificant togradic a new or pack of the stranger togradic and the stranger of the stranger togradic stranger of the stranger toget of the stranger of There exises day the gets on the 7.56 monitoring communications the degram entroping communications the degram Philadelphia and connewnrap gets of a degram and the second philadelphia the works based on the second philadelphia the second philadelphik the second philadelphia the se seen of pare and blood. But he must have died instantaneously or near to it. One moment you're reading Art Buchwald, the next moment--cone

- Ref. of terrors 1 kmp.ed. or at water 1 km this km of information to water 1 km this km of information beings you teel when someon you kmobil weeks really sitted above to dee a twenge of artifling authors that a more a reaction to being remnised of your own mostally than any text of allocation to being remnised of your own mostally than any text of above men solihed third (proverse above men solihed third (proverse above men solihed third) of proverse tables that the four Allon Poor Allon water part basit. Poor Allon Poor Allon

And yet what was in the Loca by held sufficiency held by a similar her might an well have and the same might an well have and the same microsoft and the same provide the same set of the same microsoft and the same layer one that are accounting. If you have where to be failed and the same layer one that sets controls, if you have where to the Andre was growing people where to the andre was growing people where the same sets and to the same set and the same sets and the same stateming and for the fail me - to and the head speet to the same producing law and use the head speet to the same without the head speet to the same after as a much to the same to be after as a much to the same to be after as a much to the same to be to the the head speet to the same after as a much to the same to be to the the head speet to the same after as a much to the same to be after as a much to the same to be after as a much to the same to be the same to be the same to the same to be t





ANTIMATTER

UFO UPDATE:

A commercial airline pilot saw a metallic disc streak through the atmosphere and vanish in a slight climb

Ception X was an expensioned commercial airline plot with more than 21,000 hours of the line time and a career of index than two dwo ados. But in the summer of 1981, the UFO that "splanthed into yow, full-trace," as the few an 1-1011 over Lake Michaelin toxic her few an 1-1011 over Lake Michaelin toxic her

by supprise. As Captain X tells it, he tried to keep up with the metallic disc but trially saw it disappear behind a windsheld cost.

Whit are evenly spaced, earned, jet-black particules, it "tane through the atmosphere" should and to the right of this chaft, reade to way across the plane's wordsheld from right to left, and variabled, while traveling away from his, in a selent clasts.

Hm, in a slight claim. This is the kind of sighting that measures psychologist Roburd Hannes, who works for the Research institute to Advanced Conceptore Scence or Wardle Fueld California, and investigates LIFCs as a hobby, is the course of 15 prans, he has amazed some 3.200 advance encode by caling the back Mes of Project Blue Book as well as a handu of LIFC ortemation.

Why has Hance located on ancess algoring/f Fine, he emplots, because the advance production many poalse explanatores and hences. For example, beta and hence the second of the solutions cannot protect the manatures full plots anywhere report. Metocates, ear other records, and and he backware cannot protect the sonatores full plots anywhere report. Metocates, ear other records, and using starts, using interplots and the records, and using starts are result intermation for perform any of these areas users inter-

As for hoasen, he adds, models den't fly voy far o' high And while a plot could ponriely fobroath a UFO (sport, lish a persa an an the pround to concort an aerial phenomenon som by a plot would be very deficuit as well as very costly."

According to learner, plots are also quebles welresold. Teldo sa a lo of things, any services, any acceler one what they were tooling at 17 sears tender. You hereaver, he sold applicand have metaurents of tooland and the direct tendence in the search and the called EM directs Benerees 1022 and the search manoe, Harner de account durch TM, which as as intranoos absorted directs Benerees 1022 and the search manoe, Harner de account durch TM, which as as intraneos absorted directs as agree and magnetic comport, temporary requires in die agreem multi-rubane a reachtive party share of exclusion genere, multi-rubane a reachment party share of exclusion genere, multi-rubane a reachtion for tend parking on all Answerse 17. The Therease mit. The taily, note: Harrier, there pilots who experience electromagnetic disturbance or saw undentified objects can ask for radar confernation from air hafte support groups, on the ground.

on the grand at these, answers parallel and having GRA profile and to construct Me source parallel or and/or parallel should phote an whorever. Profile pre-harman he and hink, and then an whorever. Profile pre-harman he and hink, and then they wan wakes to moder/filedates, just Me anyothe cities " Missis even class are which point on adhered may an which systems at a which point on adhered may any and the system. Should be pointed a signation of UFOL, but any Mass. T was a both a signation of UFOL, but any Mass. T was al-Mass anyot, ether damps of the parallel provide the Mass anyot, ether damps of the parallel provide the Mass anyot, ether damps of the parallel provide the provide in parallel be.

There are interesting to the vertice of a constant hundres sphtning by phills in Right with each interest hundres bundres sphtning by phills in Right with the each interest from one weigh to file of LEO basectory hundres and showing and the state of the state of the file and states in the late pairs of hundres in a showing and the states of the states of the states and the states of the states of the states and the states of the states of the states and the states of the states of the states and the states of the states of the states and the states of the states of the states and the states of the states of the control theme at Red College the states of the states of the MCCARTWINE states of the states of the MCCARTWINE states of the states of the states of the MCCARTWINE states of the states of the states of the states of the MCCARTWINE states of the states of the states of the states of the MCCARTWINE states of the MCCARTWINE states of the states of th



ANTIMATTER

EVERYDAY PRECOGNITION

Almost a third of all recognitive dre ached by Adanta prycholo cash Lette Swet non students

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The dream came true the ant stopped by his bank seam differed from

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however, similar to those collected by Pybook been included in their

sys Ryback *Lam owever, open to the

unces? Bob Baarer of iforn a based Bay vinced "Did the student second the decam before going to the bank? That's



-D. Scott Rogo

"You can any product things after they've happened " —Expense breace

LAMA YESHE

What's a his-year-old bemain boy doing at a an monastery in Swit zorland? Teaching Bud hears, of courses

Osal Hita Torres was bern to a simple Spanish family in retrianed as the rance tion of Lama Yeshe-one o the West's major proporte of Trbatan Buddhism

ists below this wrware a born a nhe," sonys Vide M the author of The Boy La a book that docume in 1984, the mank's the





location of Yache's name some My 1682 copy had iscrede Creek, declaring that against of the relation to the second second second second second in the instance, where Creek when he was selevable mentioned and burdt into when he used second second mention of and burdt into the second second second second mention of and burdt into the second second second second portermod surge a Final was portermod surge a Final was burdted with the balant Labertor balance from the balant Cachest on design and copy of the case of Chest Conducting the case of Chest Conducting the case of the conduction of the case of the conduction of the case of the case of the conducting the case of the case of the conducting the case of the case o

Even so, lacking scientific proof, some of Yeshe's billowers remain skaptical. "Onal is truly a most unusual child, but while my heast sorys yes, yes, this is his reinearnation—my mind still quostorine," anys Macharole, who knew Yoshe for eight years before his death.

"Skepticism is healthy." says professor Juffrey Hopkins, director of the Canter for South Asian Studies at the University of Virama in

Charlotherede, "There's

been a great deal of comphon involved in identifying Trbetan removariations, "Nonetheless, Hopkins tokes, a ta mous Buddhid caying— "Nely not on the penson, mily on the doctrine"—is the key That's something Osel might

teach his diadples once he learns his ABC's. —Beth Uvermore

- -----

The expansion of poing through life may be nlended as a warning not to do it apain." — Aptieigh Britagi

PET ASTROLOGY

It Fido flunks out of

sebastinesis tarticad, the tauts, in item is the tasks, not in items, ite items assumed in the registration of the set of the task registration of the set of the task registration of the set of the task registration of the set of the What Song is New Petr Mark Son

animate parallel froces of humans," he says. "For instance, Anes pets are froateco when contrarting other arienals but hypes a supprisingly low pain thresh old. Even the boldest Area will fore to name at the sech of the webmanana's needle Libras are assygong but stabborn. Fun-lowing Sogiatimana are likely to wander from home for days at a fime. And Cancers have a menarkgable ability to mimor frair owena' moods

Besidecidenting personal ye characteristics of pets born under each of the segre of the podder, Wolf's book provides an carry-to-use chookal of guarance (be provides an carry-to-use chookal of guarance (be provides and carry-to-use chookal and the segment provides and the segment petiodes that can accur, for extension, when Loos and Scoppos try to chare the same flood boak

Veternarian Elicen Brady of the Olive Animal Hospital In upstale New York doubts the stars have much to do with shimel tools. "Animals do have unique personalities right from the time they are born," she says. "But it has more to do with breeding and backsorued they seen."

But Well datagenes. "Print astratingy mails devices aware of the encimous range of animal personalbest, he says." "Different personatives require offlerwith handing and training if you're toeking for a pet that will be happy in the gatage, choose a Taurina, not a Lioo. The king will not go second dass."—Jeff Goldberg

The constalizations were consulted for advice. But no one understood litem." —Elas Canett

"Astrology is transd by the dexit."

Martin Ludier





ANTIMATTER



TWILIGHT FOR PARAPSYCHOLOGY?

Is parapsychology a dying held? Lack of funding and the demise of savetal top psi laboratories sugget? that parapsychology may well be on the nosts.

Lasted service 3to result exclusions one for Poychophysical Research Labor analysis of Principal Internet and Research Laboration and Research Lauralitan of Ban Annine, the Pospage Hornol by at Mandal Int Houland and the Pospage Program at Jahn F, Kennstell Neuroshi and Stanke Studies Program at Jahn F, Kennstell Neuroshi and Stan Annine, admin in paragepolology more 1056, automity ne mains open but has turned away from an exclusive emphasis on parapsychology toward a broader focus on research in behavioral medicine, human potential, and other arros.

Comparing of the signiteme of the situation, populations: Record Market State (Second State) (Second State (Second State)) (Second State University of Editburgh, belogg has been out on the second State State) (Second State) (Seco

Morris believer, however,

that it current pill John are tilling, it is nyll to Tilli can begin to integrator—as it must—with the interactionan "I hope the field can now consolidate, kan hom brings that Inseen" worked, and mingstat that known odge into any future approach we may takin. Marna says. "That's not necessarily a failure it may we'll load to a pootne may direction for the field."

"Duty lengely consists of pretending that the trivital is ortical."

____ brites Foundates 1

CHINESE DÉJÀ VUS

Series studies show has particularly rejective people may be mers likely to report anomalous segmentation them Blackber (by State University usorboget, Jurnel University usorboget, Jurnel University usorboget, University usorboget, University and University University usorboget, University usorboget, University usorboget, University usorboget, University usorboget, University usorboget, University Univer

So McCleron distributed a questionname to 314 gamdens. To his surprise, 76 percent thought the airch earse was a fact, 71 percent reported ESP; 64 percent, didy w, 58 percent, catholic body expensions, contenues, 55 percent, night paralytes; and 40 percent, centrumination with the deal. Thous figures that were equal to or higher than thean emperied in the Weak.

To psychologist James Aloock, autori of Solencer and Supervisiture, the results make sense. The hand a sense of whole range of normal psychological phenomenia had come mound with the sense and particular psychological phenomenia. It was a sense that a sense they don't know any batter. You would appet to find that regardland of the find that regardland of the sense.

But McClenon disagrees. "The astonishing thing," he says, "is that they reported anomalous experiences at all "—Paul McCarthy

100 CMN

Babylon

CONTRACTO FROM PAGE 66

pushed it up into the side comdor, where it just barely fit, and propped it in place with a stack of flat mud bricks braced against the bottom of the ket well, like a piller lying on the ramp

Well the skilling store to hid because the sector is used to be measured to be measured to be the sector is used to be the sector is an experiment of the sector of hearen be would be the the sector of hearen be would be the the sector of th

This means again used the setting to continue the summary all the fair and of the scene. To all the canculation of an within the ways, contrides wine stretched on talk fermiss of wood and pleased abloguidy on effort socie of the tannel ensuince all the top of the tawar Thus the thereony wind that takes under neight the ward of harborn was guided useand in the tarmed. It sets the firm biazing and cloared the ar after the fire was extinguished, so theil the minimi could dra without breathing sitting

The Eggletists claims are very marked to be an end of the second second

Thus the mmore worked, enterinding the turner in minical the landel likely as analosis, hough it revened direction may direction and the second second second second the second second second second second they bail ofter sharp-close forms so they bail ofter sharp-close forms so the second second second second second they bail ofter sharp-close forms the second second second second second they bail ofter sharp-close forms the second second second second the second the

For years the later communed. The pulling create no longer hauled bricks but wood and wear for the fire setting Paople came to inhabit frose lumets wat inside the wait's surface, and on



henging platforms they gree downwardbending vegetables. The miners lived there at the border of heavier; sorthe minned and reased children. Few ever set foot on the certh agein.

With a set cloth wapped around his face, Halakam plintbod down from wooden steps crois store, having just food some more wood to the bonifier at the annelis and The fire would continue for many hours, where the would wait in the lower summits, where the Whot was not tack with sension

Then there was a datant sound of stattering, the sound of a mountain of stone being split through, and then a stoadly growing roar A torrent of water came turking down the turnel.

For a moment. Hildum was fracen in horror. The water, allockingy cold, alarmed rate his logs, intocking han down. Ho rose to his feet, gasping for breath, fearing against the current rulation at the steps

bey had bit a reservor

He find to descend below the trighest siding door, before it was closed His logs wohed to leap down the steps but he knew he couldn't remain on his leaf if he did, and being swept down by the raging outrent would like by better him to death. Going as last as he daved, by look the steps pro-bone

He slipped several times, slicing down as meny as a doan skied wich time, the stork slop scraped aganet his back, but he fot no pen. All the while he was carken the tambel would be added a store that the slop the store south slipped beneficial the fourerity rain. Yohwell's purchment had once, a second Deluge

How much father and he reached the siding store? The tunnel seemed to stretch on and on, and the welens were pouring down even laster now. He was visually running down the steps.

Stumbling, he spisshed into shallow water He had run clown past the end of the stairs and faller into the room of the stiding store, and there was water hother than his knows

He sloud up and sew Dampye and Ahun, two fellow mnexs, just noticing him. They stood in front of the stone, which already blocked the ext.

"Noi" he cried

"They closed it" screamed Damona, "They did not wait"

"Are there oftens coming?" should Ahura without hope "We may be able to move the block."

"There are no others" answared Hillaium "Can they push it from the othor side?"

"They cannot hear us " Alsons pounded the grainte with a harmet, making not a sound against the dm of the rulhing weter.



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Production was made possible through grants from the Corporation for Public Broadcasting, the National Endowment for the Arts and KCRW/ Santa Monica. Additional support was provided by One Monazare With music by Tett Clark.

Hillalum looked around the titry room, only now noticing that an Egyptran flotted facedown in the water

He died failing down the stars," veled Carroys-

"Is there nothing we can do?"

Ahuni looked upward "Yahweh, soare us"

The thread of term should in the nearly water, paying degermitly built Hillium know is used in sum. "Whenh had not be added to build the observe of to percent the vesuit, the decision building to men alone, and they would die in their earthbound takes. There replaces near source and they down any of their contribution takes. There replaces near occula not save them from the conservation. If there deeds.

The water reached their chests "Lat us ascend," should Hitiatum

They diffield the same l borouty against the unsult, as the water role behad ther heats. The law torthes is knristling the same limit been estimguidhed, so they ascendial in the disk's murmaing parayers. Built they could's their The wooten steps at the boy of the turned. They drived part them until they reached the samed them until they reached the samed show does and their they waited for

They waited without words, their

proyars exhausted. Hitelum imagined that he stood in the black guilet of Yahwen, as the Mighty One drank doop of the waters of heaven, ready to swellow the smeets.

The water role and bare them ap untill. Histum could neach up with has hands and south the cuiling. The gast feach was right near to him. Day a large pocket of an remeaned. Histum shouled, "When this chamber silled we can seen becamement."

He could not hell if they heard him He guiped his list broath as the water seached the ceiling, and seam up into the fearse. He would die closer to heav on their are man ower had before.

The Issue attended for many cubits. As soon as Halaum passed through the states statum Sipport tooms for goings, and he factory limits tooched cotting. For a summaria to labor too langer state. With only Buddhess acountine the mars spantist that boncould not dempatch the haid superenced when first approaching the wall. Ho out of post marks he wild output and loboouting or down. He putted and lobodhem toom haid haid too the too.

Halpites, he was particips ficiting in soil water perhaps sweet funcusly by a current, all he let was numbing cold. Never did he see any light. Was there no surface to this reservoir that he might rise to?

Then he was slammed into store sign. His made list absum into solace. Will be back where he had be up? He was being frond who in and he had no satisfyit to insat He was against its scheduler. It was incredibly easy, the the languar mane shift he fat as if his langues in was incredibly easy, the the languar mane shift he fat as if his langues in the passing ready his insatisfies would both be do have still no end to held my languar and laceopted throws would have ended the langue.

But suddenly the wate opened out away from him. He was being carried along by a subling stream of water, he fait an above the water! And then he fait an above the water! And then he

Hilatum avoka with his face precedagainst wet stone He could see incliing, but he could see water near hehends. He roled over and promet his every limb ached, he was neared, and much of his side was scraped raw or winnicial from wetness, but he breathed ar

Time passed and finally he could stand Water flowed rapidly elocut his water deepened in the other, there was dry arone-shale by the feel of e

It was utlerly dark, like a mine without torches. With torn lingertips he fail forth. He found the water's source, a large opening in the foor. He remambered² He had been spewed up from manage He found a place where the floor yoo in a slope. Was there a tassage leading upward? Perhaps if pould still take tem to heaven

how much time passed, not canno that he would never be able to retrace whence he had come. He followed upward furnets when he found them, downiss' he had swellowed more water than he would have thought possible, he be-

And eventually he saw light and record to the outside

closed and he fell to his knear. his fints clenched before his face. Was it the radiance of Yshweh? Could his eves beer to see it? Minutes later he could open them, and he saw depert hals of some mountains and rocks and

Was heaven just like the earth? Did Yahwoh dwell in a place such as the? Or was this mergin another regim with at hote

hind his back. Was it mang or failing?

Hillalum squinted at the candy landscape. A line moved along the horizon Was if a canavar?

He may to it shouldnes with him breath asopped him. A figure at the end entire line to a stop

The one who had seen him seemed like a desert crusser. He had a waterskin needy. Hillalum drank as best he

camped. Where is this niane?

"When you attacked by bander? Wh

Hillalum stared "You would deceive and wetched him as if he were mad from the sun. Hillalum any another man in the carryon walking over to investgate 'Erech is in Shinari'

Yes, it is Ware you not traveling to 125 CMN

Shrur? The other man stood ready with his staff.

"I came from-I was in-" Hilature stropped. Do you know Babyton?

north of Erech. It is an easy summy be-

"The town-home you heard of #?

through the yauk of heaven "

Are you unwell?" The two caravan went off to confer with the others. Hilaturn and not watching them

revenuest of heaven and arrived back to this place to keep him from reachng futher above? Yet Hildum still hach t seen any signs, any indication that Yahwah noticed ham his had not expensioned any metable that Yaheed

reath the earth it was as if they law against each other though they were separated by many leagues How ing to think about it

And then it came to hern a sool cylrefer When miled upon a tablet of soft fablet though they stood side by ade on the auflace of the cylinder All the ends of a tablet with sky and stars so that heaven and Earth touched

not struck down the tower, had not purthe place whence they dicome. Centur ready know. Yet through their endogyable articity of Yahaeth's work in asswith work was concessed

steady from even and sought out the caravan drivers. He would on back to Rabactain. He would send word to those or shape of the world DO

lesi tube experiments. But an The New York Times reported on May 23, 1165 of Dhase that had been extracted from cows in the Fiftes and Safes genexated allertic reactions in paperile seme of whom ried. We can only who der why no one experimented with DNann after fre failed Inels and hoos safe and effective.

Today much as I try I cannot fallom the reason that the knowledge we have had of this disorder for the past two decades has not been put to be frends I began making when, as a saw en-year-old | started spanding two intravenous antibiotics. There are 30,000 of us with cystic fibrosis in this country, barely living into our twentier on average, and our numbers have and ing games with broad-spectrum antibiol icat and pounding on patients' chests in methods are appellingly emphasic

Now that our life expectancy has inched up into the twentios, many in the medical community consider us ungrate by for what progress came our way and to submit to the insetable. I recently heard a nonmonent CE doctor order to the International Association of Cl Adults-an organization smooting to al meetings and publishing sismall put ref-res "is burich of insubierrelivers

on the dofensive. Why peccle ask, and a thinking research climate? We do so for the lives that are at clake today Iomorrow and next week. An average day and all the rate things are going term of thoseunds of CF patients will de who have CF can t afford to wait while faction and seek only an effective antitacho or a debrifter means of francing the

Ironically we have never appeared no close to depowering a dirical condivert attention or funds from the lives. at stake. Genetic research is important if patients and the public poold on to mether to beck cleanal research arred at finding a treatment or control, I beinverse would be within sight of our an-THEY _TERESA MELINDO



COMPANY OF THE MANAGE IN

joined the Government Accountiability Propet (GAP), entirent group that piovelan free legal and to whittle-blwetts on of the sets (cleres ves Scheim with escipit advos on how to blow the white of the on the government's measure of pinyclearize examp size of the Clark, the asked froatantial of whittle-blowers and has organized a crack legal team to work in the behalf.

Livit waterly according to Dars the weather bowers diamma wain made more difficult by the lack of data ratioapi accounces on procedures for fighting locat: Employees attravy hawarth hod the handwards processes or procedures. Clerk stays: The fine speech protections of the Conditions do not apply to practe industry. Instead, employees have the controlling an employee have the controlling an employee have the controlling.

Within government agencies, constrants operate speaking dut als aupported by judicial opiniona datings back to Oliver Wandel Holmes A publo servert, hornes said, imay fave a constructional right to talk politics, but he has no constitutionel right to be a poloceren "Commenting on the Enset Plazgeold case, then Assistant Attorney General William Reinquist, now Chiel Juscee of the US Spyrmer Douth concurred "A generment engloyee is usroubly restructed in his feedom of speech," he argued "Dne simply case of works are wrige the AF feedom of other organization and then expend other or above in survey of here of the

In 1998 Ar Prove that any end of the provided by the provid

as the crime of "committing the truth"

There is good port to be detroit of GAP enterways, norm portpets has usen made logarizer rectifying which blown' load of legit portection. Which calitants leading for way 36 subst compared it will detroit allow the compared it will detroit allow the med Severther, Compares parallel leve med Severther, Compares parallel leve med Severther, Compares parallel leve and eventual the potentia substantia parallel with blowers who might potgas, interruppio concil is the publics

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108 Chill



nearly 50 percent of the OSC stall had guit, not to be replaced

During the Respired Terms were on the year of login circuit of the Society of the for login circuit of the Society of the loging the society of the table were burned down. Then names were subarely burned and the form agecase of the loading to lottler names were subarely burned and the form agetication of the society of the society of the loging pathol and of the lower pathol to the society "Rogin were pathol to be the society of socity of society of society of society of society of society

It took the Chalkenger detector to gain while points outport for while belowore in the meaningful loggestable. If May Based same growth have field be the filled same growth and the filled be and another Theold engineer. Alter May Denied, revealed that they had been domated tolewing the provide same again-who have actually approved the mean start of the same actually supprised to be and covered as by supprise and beam classified in any tempoley not beam classified in any tempoley

Writely overright the atternablish those who teld the thut about the intration on the subject of whiseholdware cards any the patier was outraged CAP was subject of whiseholdware calls from whiseholdware who wanted to come forward, from the press, and from people offering that he link. Members of Compress with their cards to the grand pumped on the sub-

The ket eventually incurred Basey end Net Dorido I to the Tomer politices and Net Dorido I to the rank base of the Basey and the sector of the sector of the Basey and the sector of the sector of the Basey and the sector of the sector of the Basey and the sector of the sector of the Basey and the sector of the sector of the Basey and the sector of the sector of the Basey and the sector of the

The outcome of the Challenger sites, however, produced two important precess of egislation to protect and years newed white-blower. Under the Wheblower Protection Act amployaes who had been demoted or tred during the appendit process would be remoteof in their provious positions at the



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same starts start, unnactive to the date of their tings of generation. Mere importunit, the new law starts where the dates of the new law starts where the dates of or other togat constraints to impairs in coast on their togat constraints (in the Regard production the interaction Regard togates) and the together together togates where the Annual the research code of Annual the research of Annual the research

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In June 1999 he first major case to test the False Charte Act resultd in a Starms, a Medizing Immediate Manas, a Medizing Immediate di owicharging the Air Force and the Navy be Net locaring. George Surerivation for former employee who allegedly blex the where on the tradicater activities, collected 61 4 million es his states of the out-of-coart autoimment.

The fields Claims Act has on the serward defence constraints of shallpertand defence constraints of shallpert has claims and the solar bit has been bleached and the solar bit has been bleached shall bleached bleached bleached bleached bleached shall bleached bleached bleached bleached bleached bleached shall bleached blea

The Cayalo Trac, a prevent lutt do tabilinet by movementer manager Mi chail Cayalo, sitar revende winste boeren: The year's writers incluided Bosydy, who shared one \$10 DOD awald with Hendra Cook, a former NASA budget analyst who complete awald with Hendra Cook, a former NASA budget analyst who complete sich also write to Pauline East, a Wigets their similarity or exposed for years their similarity or exposed for a week disposed and althought panton.

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GAP atomsys have won more thun 57 million in ecidements for her claints Thermolucia SS00000—the largest ever is a owi service sub—on behaf of Betrard Bencie, who was larged by the government a General Services Admintisation when the publicity protected the unsate conditions of many of Washington's fedural buildings

As antibilities clowers contraine to grave manytice as down there strangely the bean accompanied by commenced effects by settle beans to form the strangely beans and the company of the strangely beans and the strangely beans and the company of the strangely beans and the strangely beans and the strangely beans and the based starty concerns which is the based starty concerns which is the start of the strangely beans and the start of the strangely beans and the start of the strangely beans the start of the strangely beans to concern a strangely and the start of the strangely beans to cappe an account of the strangely and the strangely beans and the strangely beans and the strangely beans the strangely beans and the strangely beans the strangely beans and the strangely beans and the strangely beans the strangely beans and the strangely beans and the strangely beans and the strangely beans the strangely beans and the strangely beans and the strangely beans and the strangely beans the strangely beans and the strangely beans and the strangely beans the strangely beans and the str

Only about 30 percent of all windles blower cause have reduited in windigs blower cause have reduited in windigs blower mode, however, to common socolleget Myron Glazer have which blowers are at the forefront of "a necent booet movement this blowers of a socret booet movement the blowerhor by a common ideology of accountability account of the social social social social social blower and the social social social leadon who activity at social printingens to bring about reform."

While fair from universal, the corporate response has evidenced a agnifcent shift away from the "win at all costs" mentality. Ethics codes have been adopted by Dow Coming, Stanberd Dil ans other business grans. Om-



businent positions to teld analysises comparents stores which, meconduct, and other difficult issues have been one and and what Manalis. Several bypanical and other constraines. And etops constraines and barry preferation of the constraines and barry preferation of the torong's Societaria advices to businessrement this power products is defective, the baret response and thermal barry approach that device to the men approach that device and the term and and the pre-term and the and therma in barry and the and approach that device and term contrations which are in the contrations and therma in barry and the and therma in barry and the term approach that device and term contrations and therma in barry and the and therma in barry and the and therma in barry and the and therma in the and therma in barry and the and therma in the and therma in barry and therma and therma in barry and therma and therma and therma therma and th

Greater transmitter agencies have been too beinget hough the bash asimistation has mode offers on space by appointing a providential commeanant inneetagate existentiate and abuse of authority within the generithert, employees in the searchive bitman, employees in the searchive bitman, employees in the searchive bitman, employees in the searchive bitman from decountiged inno spassing nort. A seme of precidential gap orders threat, enthose with declose indomination to the modula or Dongross with the lass of security citeratoree

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As a temporary Musikogae, Oklahoma, Centus Bureau employee, Bile Garda neported her bees for assough teresoment and, other improprietas. He was later indicated for comprisory to defisad the US government and for improper political activity. Ine pleaded guilty to assound send was isotetened. to a year in pison. Starto worth on 10 emm is two degree and work for GMP. In 1982 the toxic on the Nuclear Regultacy Command (HHC), which was demonstring the names of 68 South Texbowers had regularized for the start bowers had regularized in the the performs court before, at 15 detroit courts of the works body before these performs court have worked body to the bower had have before the these over the NRCs detrands

More inductify (lamb successfully represented a children's group composed of Comanda Fiscik nuclear glane workers and members of this local children workers the power plant had local shad own children and the children glane agreed to drop the laward blocking the tachtys location to sware boots and the location and the children glane agreed to drop the laward blocking the tachtys location and the appointment of one members of the group is the Grocentore Reveal Committee. "It Comanche Neak many plant workers bocame whichs-blowers in order to make the plant safer." Garde says. "The public backed here up ned fragity management had to accept us. It was that or safer more design compt bitmen of dollars As a worky to whistle-blowers the case a support definition."

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On the subject of our wealth answersamy (Cotabor 1990), Monte Zanger, mishamatto potessor at Adams Binte Colegne of Colosida in Adamsa, portis su an additional currosity (Corni vas borni m 78. The sum of the feet (Zanda ural numbers ($1 \pm 2 - 3 + 17 \pm 27$) in 28 in addition is a the wealth "thonguin sumber" Amming pool balls in a transgle with 12 balls on 11 bor nodel

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Own: Do you shill do hando on work in the laboratory?

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Drive: Waant ICI chemist John Stephenson crucial in your developing the bete histoire momental?

Black Yes He was a natural teacher who empty had to tell you what he was doing. He hed you all own his notebooks. This doesn't often happen arrows desplane. Hi dans some chainery, but it don't arrown to much and John made medicinal cherhility a living, breathing thing. Eve now sport more byus taleng to chemist then I ogne to remember and enjoyed every one of team. Now that I have try own inte basis. I don't have to cross bamers to tak to them.

Chemiste and boblogits are quite dilocaré feridar of popole. Chemistry is a subject for discipitra il lyou dia i value hen isolary quo can este ai down and arabody can repeat it arranow fit aubie for people with strong cantilol reades beur boblogy on L at all life this vois got assumated, you may be the with the group subject and boblogits with the group subject to an advantage with a sub-different listed or popole. It befores it out of different listed or the beforest to alt of different listed or the beforest to alt of different listed or the subject listed or sub

Oten: You made some metaless on the way to discovering the ulcar drug or mercline, didn't you?

Black Everybody makes mistakes 1 w reported some of fram, the big ones Scoress actually tablets you noting. It makes you there you regood for a tobof lineater as the learned anything, my the sa lang hanory of mistake Do you want a full catfolog of my mistakes? Omno free

Black: An experiment is a life window you create for yourself. Nature isn't out there fully displayed so you can gaze. on sand take fail in scence we're hying to see beyond he vasible to size screeting that actually wort there at all A lot involves using your informerits, technique, chemical method, a backgoad wyden to lock at These are the whdown. Now, if you've cheer the you allo have to be camere of how band you are when locking through these title windows.

Onne Why did you have to redo your oarly experiments when you were developing ometidine?

Back: You have an execution of procluder marked with a you of the how where a program of the you of the how where of operation has where the rewell and the second s



back and lind a compound Fd looked at four years earlier 1 hadr/1 seen it then bacause the window 1 d provided from bacause the window 1 d provided

Overs Do you consider this four years of wasted work?

Black Ther's not bed for a graduate ocurse (laughter)

Orene You've earned more money for the drug companies—perfuges unwillingly—than any other man on Earth!

Base: The vice D bit getropic the proceed out of which the hear offset (a dowith me is in or try, bala, at too (a poolehear indepation). To those to hear the to which hear heart is much from limaid dasase I address the set of the tradit hear heart is much from limaid dasase I address the set of the these companies with fortunes but to one the strategies and the these companies with fortunes but to one the strategies and the the base heart fraction good the his to base heart fraction good to how the set of the set of the moment has to other heart of no with one destand to have no with one processing of have no with one processing the theory of the processing the theory of the processing the set of the set o

Other Why are therapeutic drugs so widely abused today?

Black People consume prescribed drugs because someone prescribed from The model practioner is the rerow worket gate through which all the staff hows. Are people with this phyloge and responsibility making wee devisions? Its made even hacker by our staticepitability this globally variage for a divisioning. It all like to bee more protgradulate transmig of physicales, and different undergradulate methaal coursain in pharmacology. I wint to see doctors transmit for the drugs they don't yet have

Own: Why are patients so keen to take prescribed draps?

Black Wire living in large when many papels are stressed. Propie are not leading rights have. The more we stated the have Black are one way of hering propie move house a least happy able to a more happy one. They is not a partice the state of the state of the been often enough, aren't you grateful to accentify this ban release the part of a care an infollow of the?

As for computations and the public are bactoring back the public are bactoring loss enhances and the public there use I meet people who was public there yet in ageng "I work take drags," at it there were something virtuals in net backing drags. It will virtuals in beeting that and happy according the result of the something virtuals in the back to be the termination of the term people. The industry and people like is net an even being calculated in the new people. The industry and people like is an even being calculated in the new people.



quality of He argument what the boneles actually are Const. Were your surprised that beta

Others Were you surprised that briss biosters have so many applications? Blade: Not really, once i realized bets, rooptpor mechanisms are involved in ao many propagases. The big surplice was hyperansion. Interestingly, there's not a lot of agreement about why bets blockess preview? Howerhalton

Other What about the psychological apploatons of beta blockers? I recall a Carrian abudy where they transformed type A into type B personalities

Finck: One of the earliest subjects to at St. George's Hospital in London. He intravenous apprairies the beta receptor stimulant par excellence lisoprenacrated with what [American sympethet ic nervous system physiclogist? Water Corpor called the "hight fricht, fight ing fast and forcibly. He was bouncing great distress face contorted. After ward he said he thought he was poind to de be had such a leeing of mperoa peta blocker, all is quiet and peace ful atward So from the beginning. and a way to releve it. His stress proba distorted input of information. His heart was baing driven as though he were running like mad away from some danger But his muscles were beand told here were having a kille sleep. tion, when you drive one organ system out of latter, that causes behavioral prob-

Onvis is there potential for abuse of help blockers?

Brookie is not exactly a normal paychological activity. My view u that if ancient players when to table both block any, let them as long as it's known that any, cot quarties dong as it's known that any cot quarties them when when the normal sector of the game altheory of the next sector of the game altheory is the activity of them when altheory is any sector players to survive a live years langed. They must be setlaring a grace disk of theres when they thy to pape that least black ball. Yus?

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blocker protects that man accurat his as of getting the ball in it might in tact make him a little sloopy in his play Ontri. Do you take them? tures. A number of concert planets tail gins as a highly tense, pessionale sort sweating, take of your shirt, and have ing will be fat and insipid. Pransts tell same is true with lacturing. With a beta blocker, you lose all the heart poundyou go onstage You teel more compris-Ansi Youve said we're expensioning a drug ropping on What did you mean? Black II you were a G P you'd know making explicit the visitly complice sysare being recognized. Writis even try ing to enabled from by genetic manifula-

deaty has shown its lochincal competence. Well hind better ways of identfying her imig and of heats large intecates that are easier to handle holf do sime tybe-the properties while we can do. The problem will not be our shifty to do tango. The terrible problem is what

Own Are there many more receptors to map and model?

Black Golm' year But Ho not just the did tooptore whosh on mapping to be complexed as the way bays of approach the reviews a heterchical, matpice system of control hat were up to any beginning to individual fill assecting for mathematical statistical compare whosh has to haterate these line discounters in the possibility of the posterior to be and the top mathematical the possibility address upon these insertions water and incode indexe.

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Great After winning the Nobel price at it true you rain out of your office and want to the local pub?

Black Absolutely: I've hid a hatory of wromp proxe, and paople ann't back, word about tailing you you've been nomnated Bul it was getting embersaeing to be introduced at lactures as the ferloarwho should have had the prize Insefar as 1 did therk about it, which wayn't very often 1 just diminished the idee, because 1 deh 1 seem to tall reto the right categories 1 de inclusinal ap plad sciences, which dehi t loak to me lee the kind of thing that was Nobel moawwithe.

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THE OMNI ARCADE

Executives are grabbing at the chance to play with their finders

treas So how do asper? Open vestergames on portable



wdeo entertainment has been inggated by an array of vanety of arcade sports, and puzzle games. Unlike the counterparts. "I play Game Boy anywhere," says Seen

About the size of a Walkman. Nintende's Game Boy is ns (see Artificial Intelligence: October 1990), other game full scrolling of Nintendo's Golf and the blockbueang brain-

Upscale video yuppess however might opt for Atari's ingeneous Lyrur, a portable game system that sells for less than \$180 and leasures a full 16 color video deeley Naarly 11 inches long, Lynx may be less compact than

Adult Lyrot owners will want to watch for Tangen and Atari's Klax a patem-matching puzzle rivolving blocks siding down an assembly line. A melly built in the eccades and also available for other comple and portable video came systems. Kiex is destined to be the Tatha of

graphics surpass Nr

Slightly larger than Game Boy but smeller then Lyror. 256-color video screen that sets the standard for ports ble video displays And TurboExpress is also the frat handin fact the handhold model uses exactly the same car indices as NEC's TurboGrate 16 came contaile, includplaying integua of Durgson Explanat and the sports chall In an optional module to transform Turbolloprees into a

scient' McClowen coys "The problem is his boss has a
THE OMNI ARCADE

GAME MASTER: Journey to the fringes of the galaxy under the direction of a computer

Disjectional based and their planner general carried odds prise with the unadovauit prise with the unadovauit prise with the unadovauit prise with the unadovauit the unadovauit prise the unadovauit prise prise the unadovauit prise prise puter general carried on of the unadovauit prise prise puter general carried on of the unadovauit prise general carried to prise Sair daga e bostafly a pregram played under the supervised pare transfer and pare transfer the supervised pare transfer the supervised pare transfer to an players tests that to an players tests that best only computer program players best that and the supervised pare test only computer program programs players given players given players given players given players given players given players players

The quality of the picts and the interactive story teiling set Star Segar apart from other games In Star Sagar One (IBM, Apple II, Ap pile II gs) schemburish jourIney to the kingles of a gatbace basine's invening the each basine's invening the other system of a space paragraph that december of the paragraph that december of the Manual in Star Segn. Are (BM) Apole (1991) the story, and othersetwas centimal de a space (heat of avecome proportions approaches Earth, threelemma team and the human team.

But yours taken several two-to three hour sectors to complex and as the games unfact, so do he mohyspors and the Secret's of the perioparts. Physics rapedy gat no be factored withing and begin to notact as that characters. The result as unrapely attachtsing computer paine experience that engines the simulation are well as the emotions.

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Wafar-thin seamory sords regime disc driven as this leptop (chows), allowing far superior dots alwrops, with sea new view of horsekoble) parts. De whet nokkes this 4.3-passed, 12.4- by .0-by 1.3-bit is to better Wiles 20 beurs. Prices 23,995 beurs. Prices 23,995 Mathema, Cry (617) beurs. Prices 23,995 beurs. Prices 24,995 beurs. Prices 24,995

SHARP PC-6200

A 296 mkroprosessor pawars Shorp's antoheah sites to spelseg (balaw). Tapileg the sades at 4.3 pecada, the PC-6200 feetwes e VGA separtural twes e VGA separtural terran, 1 MP of standard RAM (expendable to 3 MR), and a 20 MPbard dilc. Prices lessthese 5.4,000. Contexts Sherp, Makwah, NJ; (201) 520-0594.

PORTABLE

A beauveright is ti sompony, the Ports (15.75 perceds with 40-mee berd drive. 13.75 peueds without) is sempatible w oll Mas berdwore and software, its LC roos delly are the areables Mas upara extent. Comes with a cuse and a rechar able battery thet I 6 to 12 bours. Prises \$4,700; \$5,400 w the bord dist. Contests Apple, Coperties, CA; (409) 996-1010.

LAST WORD

THE NICHOLSON SCALE Can doctors identify what makes Jack a good bad guy?

Judy Maliat attenda fates in St. Paul, Microsofa, and hus been diagnosed a Batte Maller on the Paurre Feetwastr Scale.



In a recent pell, move office and the general moving ing public agreed that no other public agreed that no other pairs operad and psychoto as well as back Nethinen. Now wen the Ameniaan Psychiatric Association has recognized hicholene is termendous turient with at acceptance of the Necholon Scole Preconsity Disorders and Dyfunctions, disveloped by the omment Dr. Pell N. Nor

In this exclusive Omrv interview, Dr. Nor explains his pioneer ing work using the motion picture arts to describe life

Comm/ Dr Norr, the Nicholson Scale has been widely halled as a revolutionary breaktinough in psychiatric diagnostics. Can you ingliain esachly how it work?

Dr. Noir. The scale matches Nathdeon's many Nill characters to the appropriate psychological deorder. This moless them ample for the leavement to understand

Ower Why focus on Nucleion will be four Naturally, Nucleion was charant beause of the nonetable surge he has portaged. Also, it was easy to identify the increaseingly databackwalk of mental doorder, because they directly cocelate with the way the arches his systems and how many timo the two that wanterful mains. Lagh the High systews and log that high regimes has have and lowed complete terms has have deter (Heater, give us some more ecomplex from the sale) Dr. Her. A discritt Brooklow (Terms of Endesment). Nethlogen was an overweight womareas who had difficulty moleg accumitment to aded the attern who have the second at the provide terms of the sale. The second terms of the sale the baseline on the sale.

H P Notably (Line how Over the Cacko's Net!) is fourmouthed and quick-tempered, prore to violent outpurst. When evaluating real clinical outputs we had that the McMurphy types and up institutore/real because they neth central thermostres

Jack Torrance [The Sharing] & a.great toxespie of pure paychoue. This type seeres normal at Institution a short time will de velop halfucirestoris, wolkert fan tapea, and moodines

Last but certainly not least we have bary Ven Home [The Withad / Eastwork], the Devi himself Van Home types are seldom in analyze, but wecknise suggistis there are a number of them orpecaally in the fields of advertaiing, lays, and automotive inpair

Ceent Obviously, the Nocholson Scale works well But will other move characters even be used? Dr. Noir Of council In fact, I with ready developed an indexter for varying levels of lare useal phase dyaphono disorder—or what is commonly. Incom as PMS that's based on screen legend bette Davis.

For example, during the late latest phase, many woman Garnot copa with the everyday choice of the Tasis events of the free latest physical the Portest stage As Ross, Davis uthered what is petrepether most lamous thes. "What a clump!" That sume up the disconstriment of women of this stage. Unfortuniably, participation formation in this

stage during their online cycle.

Mostly, however, first bisat administration of the second second second inservices and the second second second inservices and the second second second inservices and second sec

Ormit What can a person do ff semacric trey love reaches the Baby Jane stage?

Dr. Naz. Well, there is no cure for the classifier at this time. However, I would suggest that family members anyphise at understanding as possible, offer their support, and of ocurse, and out as mining as would be port.

Cever Do you think other doctors will start to use movie tre-ics?

Dr. Nor. They alwars have for you probably from, many pabets cipality from, many pabets cipality from the particimy dansier for only only to completely different behavior paleers but doo use in incrediate various of authentic access. This photomarian was recording to the first enclose and now call to be. They enclose and the completely called and cally and one of my colleagues as a relaxably for Com Herits Emror

Gener And what does the luture hold in store for you?

Dr. Nor: The just signed to star in a new movie review program Son of a *Freud* and Jung Sheek Previews Hypowell, it should premare in the fail lineso

Until then. Til be diagnosing you At The Movies¹ DO