ARTHUR C. CLARKE, JAMES A. WICHENER, RAY BRADBURY, CARL SAGANI, CRICA JONG, NORMAN COUSING, ROBERT SILVERBERG, ET AL, ON BLIMPS, EXPLORERS, MAGNETIC PEDPLE, AND TRANSSEXUAL REINCARNATION

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EDITOR & DESIGN DIRECTOR: BOR GUIDTIONE

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By Ben Bova

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What happens signal "they do so have to do they apply and they apply they do not have to do they apply apply they apply they apply the they apply the source of the apply they apply the apply th

Readers who enjoyed Robert Silverberg is or lebrated inset Level Vehichine a coste will not wont be most the except from he new companion volume Majpoor Chronicle, which is all on the some plant but insubvers a different case of characters. Entited The Soct Parmer and the Biospeerinet, "loops 61, he sterv 124(3+1

marks Silverberg's fourth publication in Onive Highly acclaimed for the merry shortstoniae and novels. Silverberg has won four Natura awards and two Hugos

Dher lotion of larings this month also come from familiar contributors. Darron Anght ("Ecosis", page 98) and coast-one Gentrer Docos and Jack C. Halverna II ("Executive Chemency" page 56)

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(back in the 1890s) and he was the first

They are and with interest "This Way Out by Jeanne Dalu

Mamback, Box 65218, Los Angeles, CA London W85PG. England: Concern for the Dyvin, 250 West Fifty povprish Street, New

Omy regrets three errors that have regrets omitting the gredit kne from Harlan Elison's 'On the Slab. In October Copypolit // 1981 Kernaniam Corporation CO

FORUM

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Starting Over

In 1985, when I was ten 1 expenserood a clinical death during one of the tint spen-heart correspond over to use the beart-barg bypasa machine. We like since that time has been very aimlar to when Dr Charlies Devel describes, as reported in the Wind column simpled. Resurcedon' (July 1981)

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Through research of the caliber of Dr Devid's, we are finally able to discuss some of these very controversal logics openly in a isolarithe correct.

Dabra J Shotwell Missioula, Mont

When my tech was been 18 years ago, the labor was long and difficult. I was dean 11 during the rise monther and my ago was indigeneous technologies, and a statisticate fact in was never aware that my takened no my protocharge in their my takened no my monther was ever abilitio takened the my and the statisticate in the statisticate or my and takened takened takened or my and takened was a puzzling and homilying expension

I am gaining solece from knowing that the negative reaction of my family to my report incovery was not onlively a paraonal rejection so much as a reaction to their swit paraolism cod

Ella Ruth Adeo River Falls, Wo

Home-made Mummy

Reparcing: Colonal Stonesture's Genuine Home-mote Tuly Egyptian Muserry: by Ray Bratsbury (May 1991), here is a photograph of "Dr Manuel Lamas & Really Tudy Home made Egyptian-Btyle Muzmy:

Dr Lamas - archaeologist and Epyptologist for 20 years - constructed this matter of social (day in his home)

As for the painting by Michel Hamiosi that accompanied Wr. Bradbury's eory Dr. Larrae commons: A furly Egyptien mummy would trave his hands crossed over his chest in order to keep away the onl spads.

Michael Lamas Miami Fla



We that stants Basetset exhaits of

Detenting Dreams

The suggestion that ideams area as a response to uncorrelated bwilevel sense perceptors during sleeg (Mind: August 1981) bols not refue Peru? a successors who use derams to study the unconscious find any more than the discovery of DNA replication proved that human He is methy a chemical encourse.

Difficent accept the mechanistic explanation of denamis that Dire. Allow hibbors and Robert MCGarlay passers without serving the meaning lateres and usefulness of denamis at a togeter level Am Gardinger B1 Presidence B1

Kaplan Creatized

Helen Singar Kaplan (Interview August 1981) exposes asthow far back in the obsuli Dark Ages she still is

Counting that here a to below will denote that here a to below will denote the market of the total will contain you restore the contacts below and the total there are not a total and to the effective will be the total of the effective set to the total and the effective set to the total and the effective set to the set of the total and entropic sets and the set of the total contact sets and the set of the total and entropic sets and the set of the total and entropic sets and the set of the total and entropic sets and the set of the total and entropic sets and the set of the set of the total sets and the set of the set of the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and entropic sets and the sets and the sets and the sets and entropic sets and the sets and the sets and the sets and entropic sets and the sets and the sets and the sets and entropic sets and the sets and the sets and the sets and entropic sets and the sets and the sets and the sets and the sets and entropic sets and the sets and the sets and the sets and the sets and entropic sets and the sets and entropic sets and the sets and t

Equally objective table is her versamithat makes are highly served, and wwer A they're attractived, here will function and ontpy (bits) (they ind thermevives in bed with a beathful write were minoculously dropped into the arms of a warm, carring, simitores here, she wouldn't enjoy 4?

Men may autobia genetic sex cince, but De Kaplam groes the negative cultured massinges that women pick up with respect to samal play usits de manage including there from 50 programacy Manaer with pronounced assured man an hooped as write that an hooped as write

Dr Kaplan a comments lead us to beleve that she has a severe case of pens worship. It is Dr Kaplan who needs sex counseling.

Karn S Humston and Wendy R Barnes Tempe Arz CO

THE RESOURCE WAR

EARTH

By Susan Mazur

Integra the work as a boast game the object of legame - call is The Persona War - will be assume for the United Basice encoding in micrals to basely the industrial and mitting meets of the mentil community of the state of the mentil community of the state of the must be observed to the state of the must be observed with a most of the state of the state of the participation of the state of the state of the participation of the state of the state of the state of the state end of the state state of the state of the state of the state state of the state state of the state of the state of the state of the state state of the state of the state of the state of the state state of the state of the state of the state of the state state of the state of the state of the state of the state state of the state of t

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The game is already being played the

United Statute has taken thege turns—and the content is logicated in high taken the United States currently imports (non 50 to 100 percent of two dozen strategic matalia for faiteful needs. And gives the uniquital distribution of these trave materials and the stim chances for a new deal come paisver on the American side want to adopt a different ployter allower.

Weingly or unwitingly: says Mon Overton, passident of the American Mon Congress in the United States is cating the econgress in United States is cating the with and/res and any even at our rational security and placing the exervice of ration into the hands of unsatelle foreign regime. Judget to all the insatedates of the modern age.

Consider the followed paperson General Makeu Bane Solo has just been General Makeu Bane Solo has just been General Makeu Bane Solo has just Pentspai suppler of obstamaticates to operand all ampreney of obstat solthe United State and vir break materiation and has write night generation in Boath Africa Zamba apage the Operation and has write night generation in Boath Africa Zamba apage the Operation and has been autoent on the Operation and has been autoent on the



Forgang steel webcur chromium in America's next absective in the ballis for mineral self reliance to Censi the United Statist to oppose South Alexan insoft pokase and allo cuts of Appments of cotabil. We have new loss 71 before to the statistige market all sending the stock market land the ecocomy into a latigen Anzing on a recommendation consense in an August 1800 moport to Congress by the Subcommittee on Mercy and Mining the President of the United States lams to contingency plant He assume lat economic midlimitation powers and andres

These alternatives cannot way for the test minute "Mero Fassistic staff drivespin of a Rocketellen-spontoerd commission to shudy American dependence on Africen minimal resources warms "They all require , carrill and detailed glienning.

Already in the process of the briggers micary buridup amore World War II, the General Services Administration is stockpling TG strategic mesks at a cost of \$100 million to the teccayor

But should these stockplast be depleted and the other contragency plans prove instantial with the providence of the source of instantial where could we turn for these critical metals? Since the Soviet Lineary is self-sufficient in the logy microtals we must import, the Linear Statise could the result at the metry of the Rassian's with that stock of metry is

The Plussans are activity to these supplies thirty Me an approximate Nonopoly player for example, according to James Samin, chiaeman of the House Subcommittee on Mines and Mining, the USSPI is socially structure to different USSPI is socially structure to different world's supply of the metal used in the production of anochang ident

Titanum is another mead the USSP is honding. S8 persons of the world is supply be within the Soviet Union's boardineer Since transmissione quester lighter than sheet and four bries as strong, it is invaluable in the menufacture of internat and submarries.

The USSR is also busity purchasing large quarthes of berylium from Zantag which is a pointial ally of the Soviet Union Because of the metal's nasistance to templantume up to 1.00°C, berylium a "offection or was to



By Dr Bernard Decon

The sense is a set of the sense of the set o

The inhibitions may in part reflect the emphases placed on a immis-cell recearch because of its direct impact on ideasange marked licitishingers. Blood was the fragotworks target of dragogine assumerss and a mitched of target and the target the lated animhed of target sense assumers therefore crucial for plasms sequence therefore and the target responses therefore and the plasms sequence therefore and the planet target on target on the target target responses therefore and the planet target on the planet target responses therefore and the planet target on the planet target responses therefore and the planet target on the planet target responses therefore target proved to be the answer

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There are at least two goals for this sort of work. One is to use DNA: problem to identify classifiance genes octing for particular deorders. The other acts turn



Plant dyopretainsabaci the key to saving runs trigains' species from mail a ruthless amplotation 24 DMM genes on or off as a means of treating or preventing disease. So there is every respondo welcame the advance of human-cell chicoperentation.

We introduced the interformer despense model for us incomparison the unable model for us incomparison the unable model for us incomparison the unable for a bitware service and the unable for a bitware service the unable of the unable for a bitware service to the unable of the unable of the unable of the data for the unable of the unable data for the unable of the unable data for the unable of the unable bitware service to the unable of the tware service to the unable of the tware service to the unable of the unable of the tware service to the unable of the unable of the tware service to the unable of the unable of the tware service to the unable of the unable of the tware service to the unable of the unable of the tware service to the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unable of the unable of the tware service to the unable of the unab

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BEAUTIFUL PEOPLE

by wait H Lon

Copie docume to moteve a variety of the copie of the comparison of the copie of

Bability like miners is power And this movem has been increasingly combinated in this overry as a result of out society's increasing fragmentation According to DE Eller Berscheid, a moust psychologist at the University of Minereota, Toole take on greating signification when people have loss of a charters to know each other on other levels

Not only do palopie move have place of place and policy do. Dr. Bockshoel aityre bot may abort wern stery with the same meth, and christen cart course to have no parase at that anything that increasing alway parases at that anything that increasing parases at that anything that increases places at the parases places at the anything that the places places at the places places places at the places

In a Audy that the candidated with measurement of the University of Walconsen Brainhal bund that may people control of Brainhaum people to be more solitative, strength mole modal man, solitative, strength mole modal man, federative, and solitative people. The goodhout also separative on the basis of ther faces and not any lates about them percentary - to have pros topcore point and have pros topcore point university - to have pros topcore point of Links.

When does physical attractiveness first become so important in the system



others that it can sifect an individual's destiny? At the moment of berth Studies allow that a newborn appearance wherds the theatment his or she will receive from mother and master allow. And so it continues throughout off-disold continues throughout off-disold

Looking at second grades who way sold to have command mixed binargessions. Dr Keen Deor, et like University of Romoto Sound that people she interviewed justigatilitie actimated of it was undirected in the child accusated of the undirected that unathactive childrens wave believed the unathactive childrens wave

In Benchmark Institution, and a USB mark from all molecular based in the series of CD Is and show ground institutional promove him of them or her class and them be black are the adult of mark-hilling propheses (adult aboved passing and anone lack accessor all several mither 1968 book. Psymation in the Classicoum Inschers Internet Their expectations through their behavior and adultantip aetices to mither the several adultantip aetices.

Another study by Judson Mills and Ellipt Assorston confirmed that people have main success if they are attractive, even if they come right out and say that all they wait to do as influence others

The physical sector of the sec

Exampletions are not blind in the outprices the separates shutches have demonstrated that physically more physical and the physically more physical and the physical physical and the physical physical physical blocks to window a mulci-separation physical physi



sometimes called MAD This doctione has langets of the potential granty. In plant

Urran's biggest owhen population centers



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prepared would end up the writer

overwheiming advantage over the USSR implenable, pays the development of

To compensate for vasily inferior and Soviet tocket anginaers built boceters. continent to constrent. To clase the metallo

guidance technology. The latest pamenation of Soviet large ICBMs is believed to be et least as accurate as our

CHMr once pathy wat polyand boosbars-the Russians neither stopped nor slowed They four ICBM production

Consequently the Russians have a 4-1

This undercuts the MAD doctrine

In a vely few years as things stand the United States will face some 25,000 delivered to writen 500 text of their targets

THE ARTS

By Tom Hight

Rendering 1976 Mayaras Amathor permeters her music to finne Bress Affras foldbake assure net of the loadbakewkers: hooringers allum their source persist on heat ingers allum their source persist on the ingers allum their source persist on the ingers allum their source persist on the ingers and continues all the data in other themselves instruments with alway, an allumanum these beamheard on so ing allung it melates

St. Paul/Avanta/Basel, 1980. Americher bergma a sentes of works calified. "Besearch and Davidgement Music for Spand-Jamed Rooms. She uses the architecture of a building to create sound shuctures. In some of Rooms. Statut a sweeps through the traams in others, choods and lonal sea are composed american advances evens.

U.S.A. 1981 Amachier partoms Criter Vp in duet with John Cage and his Engly Mixtur in a nationwide live for hour broadcast on National Public Reduc. Every law and a hall hours the and Cage take food broads. The piece begins photy after sunset and ends at precisely claws

nergy arrive interaction - doublead in mulcial about a comparison - heat been a professional acomposer for 15 years During their times site has intered a musca that in compromisingly ideminates the madale range. Her musc exercise at a theshold wery soft or very loudi very empty or moreoldby darks www.y. high or empty or moreoldby darks www.y. high or wery two thousands of miles away or inside the beanse.

Antocher has been a Frithers at the Cherrie to Advanced Ways Bruskes at and a the May Inguitant Burning Instated at at the May Inguitant Burning Instated at a the May Inguitant Burning Instated a construction of the Antonio State (1997) and Cherris Cherrison Mark State (1997) and Cheri



Maryanne Amachar Her masic explores attennique: attenzionde the boundaries of parceptor 32 Onixi

the room was a laboratory. One theme-Minute kiely organisms (patentable?) make music within our nervous surferes.

She is thequently inspired by achieve factors and by natural counds, vibual images lumbure and lights. One of here percess evolved the facility of tawaking (Music for the Webern Car) and another wats inspired by J. C. Ballardte insuisphrane pleasare, " rom his novel The Sound Sweet

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FILM

THE ARTS

By Jeff Rovin

The problem in Holywood is that, here are normal producers like buring or Cle Mile or Loss Mayer which is why context, the second second second second second produces and the second Action of Second Second

Without the paralog and gamps of Denky himself. Walt Dianey Productions, once the poliestar of kartasy filmmaking, has been facing for years.

Technics that studio was so much Wall Disney's values that studio was so much Wall Disney's values. This loss has been accurate thy line and the source of t Woods "But thesis not a problem unity at Deshap the also have at Varmer Brochees MGM Pleasencast, Uneversal, and Twentash Century-Fox which was recently bought by an ol bifmase who supported that tamous limmaive formar Pleasdant Genald Feed to its bored."

As a coportion twich Dansy Productions as accordinations adapting here burgeoing 1V interests, a followating and the second second second second second additional according to the second additional according to the second according to the second second second conditional according to the second conditional according

Dishey who died in 1965 was a man of unparalleled imagination and foresight.



Lenn Holly Johnson. Bette Davis. and Kyle Richards in Daviey's The Watcher in the Woods 56. Okto

and a producer who actual like most of the peers on instance that who actuations Not only did house he satisfies to create motion partness of dease usatisfance but he preentition always discided suplements with head of the art technology Head summand data and wide actional projection, while an artification subcladay successfully generated computer special effects when Doge Lucaes was all in high school

Well ways a bright marvive hash the mission carps free Machines with the mission carps free Machines with the action films. But has a brind a takent for this greet makes in hangs around when the of the thins i do far han gree some action films and do not greet the mission and the source some merger. We have a portuge some merger. We have a portuge out of a dense to be a some and the source and the source have the source of the source and the source have the source of the source have the source the so

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Threes no simple solution to take address of kinners, how and be first adap would be to perform the creasive developed and the taken on making and the source of Making and the Adapt During to Making and the Making motion perfaval making and and use The source intermediate a source at the loss of Weinher von Braum and Weig tomestimate and an

CONTINUUM

Edited by Dick Teresi

PARENT OF THE APES

Envelope and China acceleration to a British newspaper with a human. Could you check it cut? I was needed. Save. I ma beg fand these old homor moves in which a going a seven persons a popular and transfer Styris always newcard, but I we workland what would have happened. I has be got cogether

After taking around the country to experian various philosia of primary research i uncoverned two facts. No crine had heard of any such research going on in Chine just about everyone had, like mit wondred with subsidies the spenn white and page of together enhibition. Some of hears scientists had given the kide more they such a cashing drought.

I believe it would be very important scientifically to the log produce an appellantial costal and hope someone in a postor todo it will make the asterptic informe DF Genthey Basman new channelser of SF Georges University School of Modismin, in Genralast the Vietnicas Beograndi Primate Research Caritia, al Errory University in Abanta Georgia.

Learnable of the possibility of forsheing a chimpanese with human operm while i was clanctor of the 'wrive's Catator' Boune admitted - I classical data marking while with my colleague but we fait these were a number of problems of an ethical nature Bourne had no classible. Newwith the two procedure could be done by using artificial insermation, a procedure adheady per finited with characteristic Wester.

Bourne's successor at Yorkes, Dc. Precision A. King, vela trol inclined to agree III anything the showed classifies for this whole idea. If is cartainly not an interest of more nor doi: I limit King anything we would want to pursue for a verify of ethical real sons, Dr. King seed Beyond their he doubled such a cross wise backscale crossible.

Othans have the same reservations about the effect of a human app cross but not necessarily about as falsability. Dr John Samira e gueralicata aith to Ougon Regional Primote He saarch Centes, was supraempty postwer that an ape luman cross outil provides living obliganing. As the postmitted out menchanguases, and goottas have an estimated methy-serenage-ball proceed of their dromosperings in accenters, a goalaite percentage han the horse and donkey. And from annuals, he noted in statewise inguilarly to produce mules. Their slight chromosome difference, Dr Berner wint on to say right mean that their othering would be inhering also due the mule. Surrell is invertible in the state of the risks of their the other shows warned to know. That would you do with such a creative?

In Stephen VI. 3 Seage fraud the site actually decontroller to decal groups. Cell of the Recordschee Physiology Unit at the National Institutes of Herein (NRI) Witersam, Passawa Materia as solid, rescaled the user of deving an optimizer temperature at heat for an encycle of the state of the optimizer of the state of the encycle of the state of the optimizer of the state of the encycle of the state of the

A cambra procedure is stready used reputady in callifs and mean Dr Basey small in history of could be made offer supposity or by using a cameter. The programmy histories define supposity programming the programmy histories and the fundam motifiers Derogramming, gonling and humans have similar geotobers pareds and needoon apps are inteller than embered mumans.

Interior to galactic to wherein the parallel word and parallel for the parallel parallel parallel parallel parallel parallel parallel when down whether parallel parallel parallel parallel parallel when down whether parallel para

Suppose, for the moment, such a thing were possible. I asked NH's Dr. Searcer. How would you get furthin hosts?

I think you could find women who are service conservations, who want to help animate in the said. After all, these wouldn't be any questions about adoption. It would be pure charge on the "-BARBARA FORD.

CONTINUUM

MENARCHE MYTH

Term agess seawal activity has increased damadenally in recent years. The accepted explanation. Todays maturity accent examinaing at levels and a hall years of age, some four and age, some four and age, some four and a hall years of age, some four and a hall years of age, some four and age, some

Now however it seems that this workly hist explanabanes incompatit According to sociologist Hern Buildus of the New York States Up wanty College at Buildus (pt in it mail-tech-central) Ammode Dogan manetauter frain the mean-cale (test microfrusher) of present day females

The provision obtain has notice the observative womandaring toget to maintaining unit the taget of executions come town the backs and an observative and the observative comes town of the observative comes of backs of the observative comes of the observative observative of the observative the observative of the observative bind and materials was been observative of the back of the observative observative of the observative of the observative of the observative observativ

In the carly 1800s other Norwegan communities scontext the onget of mentional the onget of mentional theory parts of age Bulkough adds according to Planain Greek and Asb courtos gain once machael menache batwaien the ages of tweate and four lister — Madelone Labwohl o cese



b with early menarcher

The other planets may not be able to support He but it and liakly on this one, eather — Anonymov

PLASTIC BRAINS

Foar-year-site can pick up Swethin or Unda befor than torty-year-olds bootseen then brains are still plastic then brains are still plastic then be couldely wind and susceptible being changed by expensions

Also, so we mature cur brains quackly become set in their ways But now Cellfor na Instate of Technology researchan Deuy Kesematsu may have uncovered the Delta 5 south

Resempts a separate to the second sec

In Ketteris the neural path ways for normal stereo scopic vision are toold during the first fow months of life But Kasametsu sub(PCRed ackult casts to oneoyed watch by serving one overlat that and then imposed that bit and we all perforwith company services

The result The cats brains were imported" with the monocular explinance as if they had been is transto organizations had made they brain posto ansar

CONSPICUOUS

Stiparising the Pener sppers from the truly wasted a becoming a sample matter in Los Angulies where dourk drivers can be spotted miles awar

A group of second convoc tran drank drivers are driving with a built-in pobnety tast Whenever the ignitizers is switched on, the driver must pass a skiwning-competence set. If he fails and drives knywn; the car's emergency lights flash and like from portics repeatedly.

The Drunk Driver Warning System (DDWS) also has a cossistion robotical that montins driver use and records the times when a driver falls, the test or drives with the alarms activated. The system costs 5500 to 5500.

The purpose of the DDWS is inclusionable the the drark apps Thomas G Pays chiel of the Alcana's Impairment Group Poolern Behrwor Resorth Devene of the Antone Highway that to Sefety Advent Stratus t site pooler the stratus t site pooler the stratus that the set all alconerg them to site approach you have poplating in the set of the set predist the set for her point them poolers the set for her point them poolers the set for her point

When a driver tails the storring test. he must west lan minutes before he can roppat it. — Robert Kral



I GREADOWED DEWED MES YOU WERE NOT STATUTE ROOM (COLUMN A) (Provi

UNDERGROUND LIFE

Presed by nsing energy and building costs thousonds of homeowners and building costs thoubuilding costs and building to the earth

In the United Baukes 5 cool homes or apartments are alleast partly underground 50 pro dozens of bharsais, shopping mells offices and ochools accounting to the schools accounting to the underground Speech Assocations, at 1, 500-member group whose philoteophy is churous. Swedich has apaid abarbas, underground

Computer cartains issuegptreatment plants, grain alice and other wertanes. Thirtyfive percent of all investment instructures in the USSH is for underground buildings.

The benefits are many Haring no col or outsute walls, the structures cost loss than half they power pound counterparts. The earth offers protocont from which and heat and freezing - and oddy enough toos earthqueless since there is nothing that can topple

Energy costs for underground buildings are bear than for above ground buildings because the ground is uponly 53° F= cost in the summer and women is the whiter Underground buildnee show the space above to be used for farming or servershor.

avaity modern undern under ground structures are any and innovative. Cape Cod architect John Barnard's subtemanean houses have rooms around a surken oounyaid. ALTempot



America has 5 000 underground horses and apprometia, as verillar dozens of idministra shopping mails. Affices, and over sonooa

THE INDIANA PYRAMID

Given enough money (and here events to be enough of here events to be enough of note time there will be a excent Great Pyteriad of Cheopa built that lists not en igyot built in Indeana

The programs, to be made of Indexa Henesdone will be emoted on the 20-acre size of the indexis Limespore focuss and Demonstration Center in Bedford. The cost is obtrated at \$3 estima to Badford as a garant from the Economy Department Administration (somehow it escaped the Resignit budget actification

The indexe lumestone founds and Demonstration Center is a project designed to attead founds to indexed custry region. The sate overlooks the two langest quarnes in the country and is planned to be a combatation. museum and training overce for alcoheruitiens

The reasonable should be a set of the set of

R is not an extent duplicate: The original is five times higher And it an basiclosition that Bedford places any special slockim anything the pyramid power. There's no mysticiam sincived, none of that malarkey." Edington tensories

This alter will also feature or 900-foot-kang Higalical of the Great Wall of Chana, with owars also made of Indiuna Intestoria

Doublas Collinai



and Preased on Envicence and anong even builder in subject

CONTINUUM

ODD COUPLES

Are your bureau drawers full of neatly ananged otion coded stocks and shifts, or does your histotet resemble the spelowar learn Histor McGee s closes?

Proceedings to ballet travering and its attendent insurings but New York benefits to travering your brave a inform percaptual style in a says, that apount is for your obsessive heatmass aboremable discontinees or the work of of the subs and leave the caoff are right brain poople in addition visual orientaben corresponds in reachness while Kenastrutz people — who take in information preadem resely, through than consist, feelness and instrum—are act to be slopper. Stoppiest of all are right force in incomnes, restlets are left-brain visuals

Potters cabinetmakers homebuilders, and other criatismen. Misinotas tand tobelleft brainors. Actuals lake their causi form the



Farmous odd courses minates The text Story with the solar advant each refer

behavior in between

Researching what he calls the Odd Couple syndrome Mills focus that the kincky Fellows of the world are dorn instead by the brain sleft hamsphere — the vertaal time conscious orderly sequertial half

The brain's right ham sphere is imagistic spontaneous, and heristic. The untidy Oscans, who squaaze the foothpaste from the top

arain a nork arda

The important thing to understand. Mile says like that neatness or sloppinase an Lintended to hart any one it is just the way were programmed Sloppy people just don't yee things they don't precieve vesail details.

matched opposites als-act and Mills has devised "Odd Couple, workshops to help them ive together more hermoniculary. Eighty perceletion her couples we we seen are composed of a taby person and a messy mate Neat diaterise and hand to have slipply children and have slipply children and have slipply children and here we have the table table set.

It is the group public which is demanding the untroper of isotense, for modern excence in air things which may based as indicatives. The demand for as ency as or all calls, more transitive with data size of whitegoan not to learn this programs of as one demand.

- Varben' Wisnar

MOON BILLBOARDS

A Los Argeles advertising immivians to set a new land of space to boards on the moon and minimussage eleques on the space shuttle columbus

The Bas Lanch Company has taken these and other proposals to NASA and numerical government afficals in what Lonsch calls an effort to greather the poople and opportunity to become involved in the space program inhally Longch wate to set

minimized polytics Cearry ing a supportive indencemmercial statement to 50 ad winking all ST million each The funds would be turned overto NASA, which would facual a cathere in each plaque for 60 accords cluing a shuffer mission and pinhaps powde some VP Brinnos to advertisers at Branch according to Branch according to Branch according to

In seeking inclusive cut-



the moon. Lorsch says 'it is inevisable that in file nottoo-distant future there will be considerable amounts of traffic between Earth and the moon.

Eurolar mining and other development of the moon's resources will in all pochubitly be conclusted by private consortants working with government agencies Advantang will be an even present combaring reministie of the taméer things of their home planet, says Longh

While a sawy to salitize theretae of mouth abboards in store the association agreesing revenues for the spoce alling revenues for the spoce pools of the spoce pools of the spoce pools of the spoce and a spoce and the spoce association of the spoce pools of the spoce process in the spoce pools of the spoce pool of the s Tomorow a charoper will say with missionly gated sense processly with a with two thought and let all the time sind with the American source from woother. — Have Waldo Emoroper

We are not prominify put on the earth to see fitnegh one another but to be one another but to be one another dwough

SPYING ON THE WRIGHT BROTHERS

Had a turn of the century spy beenjust a tad more preposed the Wright brothing good did American know-how would have gone Bream says a University of California at Santa Borbara heteram.

From utpublished documotos is drivish and Ameri can archives: Alfred M Golim— the subior of a for inscorring book on British air power— has perceditagether the remarkable tals of a Borton who speed on the Weights for a year both messed is course? impligates

One Patrick Y Aesandair a memberio the Aeronaulo-Society of Great Ilinaam becarre forcedly with William and Drivlin Weght in the pre-fifty Head to Right Head Rayson Other Though he Rayson Other Though he Rayson Other Though he Rayson Cher Though he Rayson Cher Though he Rayson Cher Though he Walt Carolina, in December 1023 the would be ray got more a place to winness winning place to winness

As it was, five years respect before the U.S. present the insurgeous source right the insurgeous and bought a flying machine Bastan got one in 1908, too, and the designer overtimuch to the center American revention

Had Alexander been on the spott is see how her flying machina worked in 1903, Golim says, Britan workd probedy hew gatned sevand yours lead over all other countries in availabil And for one thrug, the Royal Ar Force might have satilied World War I much more quality—Judith Hooper





-kst explane. Poor insuel plans knot it out of British have

SPINE MEDICINE

We laborationy rafe at Taxas A&M & College of Medicine staggered a little when they walked, but walk finey did—cyste a feat pon eidering that their spinal conta had baan severed just a few months before

due to an experimental treatment devised by Dr John Geldent He placed the rate in a hypertexic chamber Over a period or has week the forcid organized is the animal leases are administrated TMSD (or mathy surfaced). Since of their rate that underwerk the constructions function and sensation enclosing the two that walked. Hats test miowered any exclusing the two bened only exclusing the two proved, loo but they digit to instruction a math). When we explicted the on-mole we saw new new onthere growing into the injury in the ones that showed return of sunction." On Golderd saw of sunction. "On Golderd any two also saw the prearisation of nerve balance neet other saw.

The block back to drive new tension with a sentence Celebrat away is a better an explored out any or the sentence of the sent

The oxygen-DMSO instiment obviously holds outhops for spinal contenyated homsons but Geldens cautices that hav work, for the prosect, a shortly organimental. This is been research "the emphasized it may take syrais before those method are perfected."

- Barbala Hold

The denger of the past was shat then became alayes The denger of the house is that then may become wheth

Ench Fromm

"If Jepen hed manufactured the Columbra the Mexwoold never have failed off."

> – Nashtada Attawa of Mtsubsite Electric

CONTINUUM

DO-IT-YOURSELF DENTAL FILLING

Future first and lots may contain an item that anyone who ever leaf a toath tilling to a steatk will appreciate a do-4-yournelf temporary dontai tilling

Dr Gene Wagner put to guther a terrorouny filling to take abing on hel washers in year ago. When he got harve in he hought the des hed making possibilises. The Massing Drug Company agreed Alter mekning the Agreed of the mekning the Generation Magettal Glassioped Demang when in hopes with become a stagger harm in hat and ists and

Dentemp consets of a fuber of exigenciand a poole of of zino coocia, the same ingredients that a dentist usels for temporaris as The two componants as moved in a dish ingluded in the package formed into a ball dhed and reserved into a cavity if well to available in a single application kut for \$3 or a double application package to \$5. An application strouble bet perved down.

We third a backenge in every home and first aid fit." alide Magedie vice- propodent Lany Fahman. We ve never spoken to anyone who hasin toost a filling or crown sometime or other."

SHARKS' CANCER

SHARKS' CANCER SECRET

Sharks rarely get tumors In 25 years, after examining some 6 000 sharks the Mote Menne Laboratory in Bitmatha Floncia, hes found only one shark tumor And it was bengin

If Gart Loar of the Note lab is right, sharks may be resident to tumors, and they may one that release to a natural mechaniam that inhibits cancer Once scientistic learn how sharks avoid cancer he size, they may be able to adapt the protective autostance or ovisiom for the turnar body

According to Luc, sherks phraps situe of cancer with an immune system that unknessor won highly speolic system, clearbays a block array of invaking substances. Their resistance mous quantilies of warmin A and hat contained in shark Viet Their might even be an unknowned agent a chemical substance that control context or that control context on that control context immunes.

Luer plans to test most anna by fleeting his shakes affection B1 a claranogen produced by smold that is found on gene and ground nets. Then to bachefy the do forsise machaneon has keep the shaks healthy he well esseme the chemical divarges in their blood and hear 11 and when Luer clacoversities shake' asake calcour researches will del hear to apply the incolong.

GAY DISEASES

Two mystericus doxupois are clasming the lives of homodebault men in several American cities and are builting epidemiclogistic at the Canter for Desease Control (CDC) in Atlanta

where calling it an outbroak of decreased netseance says CDC inves highlight lames Curran and it a very very serious." At least 15 gay men have been Scrollen by consurce vers cernal preumonial a disease writaethy unknown in people who con t have an undersying disease such as likukama that suppresses the unnit that suppresses



A clearann in She gay life-shrie

Teenty-sectower developed Kapose sectores a nero cancer of the skin and rifernal organs altor coused by immericationarray Teenty-five to 35 percent of all Kaposi calses have been fatal and many of the menhave both diseases or anhave both diseases or an-

Cubic field-workers in New Track Gity San Francesco, and Los Angelas are hunting for a resont. Since the descesses and tolerand to be intogoccus and most of the wolthis clich how one another applementagets suspect something in the gay Mehyle causes these allments.

Intrakini anachetica such as butyl nittle are one possibility since many gays use them (to enhance plaque pleasure). "Curran says but ao tar we reatly don't now." – Judith Hooppir



The Scheler peri of foung a hilling or a crown. A table of eugenol and a pecket of pric oxide may praintie a temporary solution

NUCLEAR GOPHERS

The problem of where and how to bury the materialise arithmeture from readers hacklines and commencial concerns has landed four pocket globhols temporary jobs at Loe Alarnos National obviotnes in New Marcen

The graphers are gating their lownin technic – carerols, rolled carling and a variaty of gene vargestates – borgen forming than recreat borrowand the second second second second second and the second second second second respective and the second second respective and the second second respective second

Genetic DePoorter, of the University of California, who classigned the popher experInter: plants to excavate the barrows to new whether the animals can partitude work-bound plant and can't partitude by the and can't partitude the part of a langer study, analyzing the internations of devine plant noise digging synthesis and the rear within activations way be thereare three of work and rear within activations way built be used to plant and built new buries ates

Not the hom the popphers. 320 entryp canadius of the two weeks to contain low level weeks to contain low clove to their address to the clove to their weeks deep roots of which have deep roots DePoorter will be trying varrout benner materials to leven which onies effectively detour the paints works excurd the canadian solutions.

The gopters, DePoorter says will be set free when her work at done

- JULIA ICO



Gophers are now on the Los Alemos payral. Their mission—bying t burrow shrough to ischoochive waste, the reveal—carrots

BUY OR RENT?

Those who are deciding whether to buy is home or to rent one can get a lidle sosoftio, schere on the matter upkeep for example - new much at a profit or gain three would be from safling the house after a certain number of years of owner table, and finally how the



topping for a normal A crimo and into you mother A makes serves

computer program

Johnson an association poliveat of a consumer econocimion at the New York State Cost ingle of Haman Ecology has Stiveleget in program costed Equivalent Rend Analysis which Rigues on all the finalbat versitions For \$5 Johnson will refin a remon Traking also at taking out a montpage whather it makes manage whather it makes

Occossent the tee Johnson main out a detailed reastionname, asking for present monthly met net an come, tax selection, local montpage realists cleangree utility and maintenames roots and expected approciation of property

numing costs of homeowning — mortgage payments, property stress pert of there is on a, braaka approximate a monithly bases and that is the pritoplaret property factor Johnson says

Some seal estate programs already seast but Johnson who a speet one and a test years dywelpang his says many similation bissed and more look at rome to any work with three sages role inference scenarios of bab taxwage and best as his does

For more information write Equivalent Rent Analysis c/o Professor Michael S Johnson 108 MVR Hall Comell University (thace Nr 1483 — Couglas Collegen

Nobody knows the age of the flumen race, but all lighte that it is old enough to know better?

-Anonymous

CONTINUUM

NEW AGE GRAPHOLOGY

Randwrting analysis viewod by many as alento astrology is increasingly being accepted as a science in the United States 2 000 https://www.science.org/ https://www.science.org/ https://www.science.org/ tomastrong.org/ pib.fr/k.increasiong/ laten for granted is a com plex occrdination of nerves muscles and thoughts than involves the whole person says Steven Siyter a Louisville Kentucky

Two things have a ded graphology a increasing credibility Rist while originaling as common sense, Know has a body o

Day my Hant I would like

A DAY STATE PARTY OF ANY OF

Graphoenalysis Bookey By shurtying how people cross their this dot their is and form their lottes: handwriing akperts say they can declace such fusiawa deer aveness, organization, contidence anthusisian abachtidence anthusisian abach-

of all corporations and Likyt of London uses glipphranetyse to screen employees who handle large same of money. The FBI malyzes the herdwaring in hote mail sent to othoals to determine which threads are connect. Wrining though into Tomaps the Newcobe

emproces evidence disseland over the participate and over the participate three books with second second books with second disaders of second disaders over second seco

Expents say it's not easy to

cherge your handwring for abeet to the graphoanaing a set to the same - or appear forced. Also, penmarahip doeen I matter Even a messy handwrang mily rokcate a koen mind solya Sheela Kuntz a Martel Ian hendwitting anglyst

- Suart Diamond

LASER ITCH

Physiciana in the Linned Statist generative use latence in dramatic or identic ways such also perform merolatignary or to match made the systebill to treact tendones caused by doubletes. But in China matchail researchors, mor using latents to come such mundation alimenta as too paire alimb persistent using ten.

Last year doctors in the Chinese county of Zhao Drag were contronted with a high incidence of severe too terms in young women Some of the women were hospitalized because the hospitalized because the paint was so severe that they obtion t walk. Preveous at the local People's Hospital Number Grie turned to lasers to find a cure

The point is tools were bothed in an envestore netrained baset boars for 15minute personal. After four to all duck facet treatments the pain duck share to the second provide studied. The operation baset baset of the operation of the second share out pain by wepsing of the second pain by wepsing the second pain by wepsing the second pain by the second pain baset of the second pains of the second pain

This same declare used a defeard laser to combat an analised that had bothered on patient for 14 years They duminated the affacted also with the nd beam from a helium near laser if the declare report but they can petry dispeared the declare report but they can not explain why — airt beach



Chinese patients. Doctors in Chine are using search to bear young incrition with service for pain, as well as one chan with a problem don

96 DMM





PHOTOGRAPHS BY ANTHONY WOLFF

Ingrise that an vaneportation The phase is Lakabust, New Janey, and the machine freed decised builds are community is an arritin. Furly four years ago, when the German zeppeter Anteinitung dissolved in forme at this aumi location, the watering of arthritis water supposed to have gone up in billows of burning gas. A cross-

operate of the hardpart risks therein his wave in the the active of a center-and. Benchmark in the matched addition, which is added with the haushed extension of models. Led by the workshop try is helposition, mercy maintain waved without extension by a helposition, mercy maintain waved without extension of the try and the second second second second try and the second second second second second try and the second second second second second try and the second second second second second provides application of the second second second try and the second second second second second second try and the second second second second second second try and the second second second second second second second try and the second second second second second second second try and the second s

BY KURT STEHLING AND MIKE EDELHART

THE BLIMPING OF AMERICA

Believers hid the parts, planting the seeds decades ago for thrwing arship and aptry shrweled up, not at all helped by the last that an isolateg propositive was Naise Germany. The last againcatcl free of Demon was employed by the US Naisy for shore patricid using "Netal War II But after the war ended, the 100 or so asthips where gradually phased out by the only 1900s the anthip second to have dispopation from the patient

However a small group of eventors and organisms immered connected that the Moderburg was a taken. The cause of the Gavatare is the view, was the task that the Gavatare had been factor to inflam that ship with flammable inplangen because the United Stores would not see Gavatare and ship with the insues. The group dutin warf to for the degart concept of lightlethin air flight che.

So instead of jurking the Naxy bitmps, they took them spatt and had the parts at Eakilituit in corefully constructed false wells and compatitivents scattered around the site of the birth pp stagedg the seeds of 44 clausescan respect.

Now germanan suithand A legendary, waitan proneer Passedi has deviaud a totaly new kend of anthip that melids the propulsive life and drive of a birtip. Pasawore is using the other million cubic factor bag drame of Amontal's abandened anthips to build if the birtis the longh of a football that, the bag will sid on a melial frame, were write ing the lossees all the four comean.

If each only because he know dough the control GHP built have been used able control GHP built have been used able that the second of the second of the Applications and their second of the the second base been on high in the second base been on the high the high the second base been on the high the

Paraktik Hel-Stat for all the romance of its propilion is not the only rewinnight anthing being but it. All over the world momest has boon served in lighter than an crait at the 1960 symposium on the [cohamics and factorology of Modern Arthings in Pants base were among the proeats thercegoed.

- Heliocottal A2-100. The Sportlee Netrosis (rotanthis Acception).
 Netrosis (rotanthis Acception).
 France: his designed a habital machine with two Insicopter rotors an effort stde of a 3,000 cube-meter (alcost 100 000-sciso-holg pat bag) it looks bit We achuber water holding a hity in reaching hand Lie holded.
 Install for mountain-range or insocessed the strategy
- Dindestaria Itam France's institut Météorologique a a analier creft desegred to cany 550 pounds to an altrude of about 10,000 lete It will func-

tion primarity as an etmospheric probeand air-pollution tester

- Bannhap int is name mpiles to datapowerd Catowaset by Proteoser M Gatnet Khoury of the Impanie Catlogie in Learnin it groups actin calls that can oparate the empires for 26 hours on 9 hours of samplet. The world of the cells necessarily the sample to be cells necessarily the sample to be cells necessarily the sample to be calls imperchain payloade memory. It was probably be updat of the audatin samp trainable.
- Thermoskystep is an assimpling tery for use over the English Channel For \$32 million. Britein developer Malcolm When roys he can build a 300-bin step that could be the workhome of transport between English and the Europers contract.
- Kawasish Henry Lifter The concept to smilar to that of the Heliocostati buton a much larger scale. The Jupenese ward to use the craft to lift containership cancers in 30-ton lots.

6 A small group of aviators and engineers remained convinced that the German zeppelin Hindenburg was a fluke. They didn't want the Idea of Ighter-than-air flight to dro?

In addition Braziliana shawar tenseo i ranse a antheja for aim nihe Amazon Juliya and Carradition went cursoa aluku jaragi hem tin hau'agi heavy valuadite oli santo. Tandrečan tadi of Englindi hai securialidi about a samit, peling aranto dara nahing moto for all tian heaved air The awards increased to the second security 4 wouldh amount to much more tana a peor Servers prost one of baostime tange peor Servers prost one of baostime tange peor Servers prost one of baostime tange.

We present the controlling along the test of going tables and higher a data tables so much meneor intential as which speech city datageted to allow and sheet Table meson is summade as in one word table. The Andreau, with the control-gapping with and hinkey loads than anything power is to hinkey loads than anything power is the anything state. The along the anything along south that anything power as the anything state. The along tables anything state is the least table to be the anything state. The hink subsection the large values to their interest as the large table in the state the horizont all bits the bits in the state of the hink merces. provides the lift Puel is burned strictly for moving the call along the most efficiency causes from one place to another The arthip can gable dready to a logging sechal the timber clear of all costructors and head straight for the mell, wasting mether effort on fail

The protect that must be used to see speech Angineer (VSD meters and hour an thips, 100° Bit. The speech short is copy thigs, 100° Bit. The speech short is copy amounts of hum-up to 1200 goldres an hour The planes are way have used the hum goes toward overcoming that weight and backward the termination speech of the 24 App. An analyse with a final fill come that be planes of the speech short back and the speech speech speech the speech speech speech speech to the speech speech

The Hui-State will be chergen to operate them helicopter, says Jahna & Bouson a tention-metragometric upper for the Agricultation and the same state of the same interact most listen from Laster of the Heli-Stat upper transmission of the Heli-State percent of theiropper costs for the same percent of the same percent percent of the same percent of t

Huung 35-tonicats of logarist the only proposal use for the Hel-Sast Passeds rays it could help to unload containers single in portiess areas transport of higs own sough terms more oversided midary structures from ship to shoal and even place hydrostecting and nuclear-power place hydrostecting and nuclear-power place hydrostecting and nuclear-power place hydrostecting and nuclear-powers

Leutreant Commander Kahl E Wilamts who until nerethy manged the Creat Gard's advanced lacknergy ongerms, traverse a file of 50 Cock Gaudi drigbles to divict intept through crowded ports, felliver capatrest to o class alam nacus people homiveses in obstrose and teppolotily kase ali way peeried for drug atmosphere and ilegal alies atterfacing to enter the ocentry.

The Coast Dasted scene Lakevage need a transpectation in many all salest speed & details who you in zagong allow grant the coast of the coast of the concerne are the coast of the coast of the concerne are the larget of time is coald can ensere over one manipul calification likes a biologong of these Allmans differ coast like an encount or mode within calification likes a biologong of mode like table amplane or skem over the water allow the watershift.

An airship fivinghter trip will take a comperatively long true, but how important as Ibar? Anyone who needs to deliver ofhisparicy supplies of during, spare parts, documents or highly panalable goods has an unsestable maton for using a plane. But much airheight does not need her-hour cost-to-costantwee The caugo posis by plans because surface transpotion month lake as long is a month

Anthree sould tell nocky in the made They could transport goods to Europe in just 40 to 30 hours. The lower bally of a right arithmic could readly accommodate a closen objects each the area of a semitrailer hock, and Rythem 10 000 miles webout landing. That's the detance from St. Louis to Rome

Aithight might be more convertient than planes too Consolvably they could got up cargo right of the glant, like haars by howening near the ground and housing goods about Then they could by at like planes taking the best possible at rouns to the classification. Draw there they could by taking a document of the set of the set of the classification. There there they could by taking a document of the set of the set of the classification. The set of the set of the set to classification of the set of the se

The dirigible isage for Bo Blocck a prime hask ingreent and starbursthauau prime hask ingreent and starburst hausait and mapple poorting than dwin the moduli and of mapple poorting than dwin the moduli and Boocold influence and and dwin the starburst Boocold influence and and dwin the starburst Boocold influence and and dwin the starburst Boocold influence and and and the starburst moduli dwing in comparison had autoing which available and boot and and the influence atomic and and and and which available and boot and for two of hum 2000 miles. Bypes is more influence days.

While Bocods a WAC concepts may seem wickly subscript for a tose transportation system is deemstropy real and the six of sole in believing that some both of instance lighter-have intransport and the second second

This new entrings are also causing the U.S. Coat Guald and the mittary pervices to look up. Goodynem in follow who have feated that hadmone lating over sports works and paradices, is originating a tim, meneuventative timp for issing by the Coast Guard. The altrains will also just for form 8 to 24 hours, orusing up and down the Fastern Baskanad's timing range.

The stretup will give as real presence because it will be recenting away lago butterant. Commander Williams. Boar captains who are tempted to atway into farbiddan watters will new to boarnog overhead and think twoic about temptorting drugs or other iflogal cargo." Braches of the mixing was statucted by the post-taily measure surging on the degeline for radio school where tags asthe school was been used on the school was using the dirightle as an attraction using the dirightle as an attraction model pullaries. These are Attended models pullaries the direction the ansate inspace school be burched into the attract master could be burched into the attract master could be burched into the attract master could be burched into the attract direction to the tail attraction the attract direction to the tail attraction to attract the direction to the tail tails the direction to the tails the direction to the tail tails the tails the direction to the tail tails the tails the tails the direction to the tails the tails the tails the direction tails the tail tails the tails the

But the most obvious and interviews in the lawy application for an shops in to bian sport equipment. No exemp payma arrant, for instance, on carry a Stoten Take. An air stip could carry four at 100 miles per houbegoint the long-standing way of a shopp in delicate hype publication ministry program relation bank that properly engineered topol cette. Could with stand complete public

Elmagine a silveryolive cylinder coming into focus from a groat height in the sky The ship's skin mirrors the flashes of late-atternion suri on the East River and the Brooklyn shore.

purestment from enemy attacks

We and commence also the two most two sphere in consideration of a successterior and the subscription of the successterior and the subscription of the subscription of the skiture of legitimetras are towards on the skiture of legitimetras are towards blend Devident amountee and calm with blend Devident amountee and blend

An infrastion of this future curries from a latter wattern to Goodysar by Zala Wergara a low operator in Curco. Pieu Wergara wanted to know the tacifis Goodysar Aerospace was changing for fights on Datamore curries and wattern.

Also Vergera and the most imposing things to also in the corner of the wold are the breathering runs all be incase at Mactu Richar bolgetingtothen require a torios. Intraces ing up the ode of a mountain on an articulated name-spuge railway tobased by a temping mitbus bumpition along sublid at made

Vergara found that has outdomera didn't want to subject themselves to the trip However, he water by dirigible, it is porsible to well in one day ten or more ar chapological nemaris on the way to the Machu Prochu runs and have the baat panonatiic views of the landscape "

Imagine Vergata's guests draing gently actors Peruvian skies, past colorfully drossed indiana and aurelooted lamas, then landing at Macha Procha for a lanch in the abadea of the creat monuments

Unfortunately auch trips are years away hore of the sureby developers pain to bacome introvied in carving passengers unal more preseng and more fundamental isisses are insolved. Some auritie respects wonry that a time bit of people will targ on inferent anexely and fear air air artiges of the biliantig introductor that people conscotances.

Overall her most striking plans for the age of antitige traves whenever in trage come, waterend by a group of scretters as the stream (Coverant and Annosphates, Activestrated) and Elicopy trades to tareform the stream and the scretter and the scretter stream and the scretter and the scretter as meaning and the scretter that would land as the screen and the scretter that would land that. They remain a scretter that would land

Imagine a skety-oke cykner ocrinig sowy mo tock from a goet height in the sky. The shiph a slightly indexcet skin lathers the late-filtrion ambor survight alto the East River and the Booklyn tantie the East River and the Booklyn tantie the East River and the Booklyn tantie the short 500 foot above the dock. At that height in this rays becomes appeent as long as these only blocks and all we are a theory topol

At its tail, two contractuling 50-loop trains spin thread by a cylinalcall initial initiad. As the error approaches the dock is properlies in the existing work of from horizontal to vertical. The cylinder hears Carend most of well by windows below the noise offer a were of the careful below the noise offer a were of the careful personnal Arrays of weining windows inte mergen want the slowly approaching pier

The moneter pokes is nose into a conical tocoptacle about 150 heet above the dock A clozen rods extend from the stags bely and attach to lock-in trangs on the peer

The folg basis stops moving. The rolose and propelers stowly wind down in a confused strabeliks pattern. Power verso cerem moving: Louispakawa along the water faker metallo announcementa administerinati, antibutive to be throug. Sei large heart covers, each as big as a localing approach covers, each as big as a localing approach covers, each as big as a localing approach covers, each as big as a show Hatches at the strete biotrom open, and wanches begin to loc cargo contenses down to the see where failed trutck wait.

We may sool By in this manner but right now the estable terminigence is at a more protocic stage. Fration of their full poweral will take years. But, to the dedocated people who have waited decades for the chance to prove their machines worth what are a few short water?DO

54 CMM



He couldn's remember getting out of bed or siting down in the chait. He cauld dimly long time watching the slow advert of dawi but he max only set becaroing to

distance. from across appalling guils of chair of standing need to the window or more rarely propped up in the corner mickly of database when awareness re-

half reached the char it would be time to winter days didn't move at all until Mrs Hartfin currie upstrate to chase him out it.

The east-facing window was washed over with pale fragile blue, and the slow-

Very far away, floating on the edge of of Farrivid behand the radius and at that nabulation were its out the house cach by one Swithin the bethnoom garly splutter shough he were drowning in a sea of phiegm. Sade s baby crying in a vain at tempt to wake her sluppard mother. Mrs. Hamin slamming the kechen door, Mr

and sighed king his arms and setting in the subject. He rubbed his bands own clatter of traffic incident of gescena incident

For a momant and traht and terrifying 9

-

Jame they called him Classy James

The bathroom was cold too. It was only right and early in the morning. It got colder

every year, seemed like. Maybe the plasmooth as plass that quicled constantly yard boy had already brought up a big basin of hot water allocupt by now after

only? Memory was dim the years were

at him looked away again People tetated

He crossed the score to her phase and

Morning Jamie Mrs Hamlin said crossly

note her grumpiness ille was late again

We all down then hearts along down the sector of the sector along down the parts in the sector along to constrain the parts in the sector along to constrain the parts in the sector along to constrain the parts interparts the sector along to the sector along to sector the sector along to sector the sector along the sector along to the sector along the sector the sector along the board to the sector along the sector the sector along the sector the sector along the sector the sec

Finally the charice came. Seth asked Mr Barruela a question. It was a point of foot not opinion, and Jame knew the answer

Yes, James said, at one time New York Dity did indeed have a larger population than Augusta."

Abouply everyone scoped taining Mr Samuels ips closed up light and he generated is bough he had tabled arrething foul. Sets shock his head wavely booing set and disapported. Jame low erks mit head to apod 56ths own. He could ensue Mrs Hennin seeting and glowering beade him but he would'h look at hes after.

Damin H, shat wasn't what he'd meant to say. They hadn't teren talking about that at all. He'd east the works thins.

Neid done it eases

People were taking about term servers the table, like have bat the could real in our term to the table out the work that board and the server and a term that be and the server and all that termented was rease and having also. He conservated out houses the termine a also of com based trying to haug on the constrained and while the work publies methanical also while the work public while the work public were applied as were to the conservation and the hard termines and the server of the other termines and the server term termines and the termines and termines and termines the beard.

When the world table came backs, in to broad himmed touble on the porth--imm wares assets of the oblivity still called in the start of the oblivity still called in the start of the start when him into pace and the start of the examplement bits of the start of the start is an antiget to seek start, see the start is a start of the start start of the start of the start of the start of the start start of the start of the start of the start of the start start of the start start of the s



Why It's Such A Rare Bird

Wild Turkeys are masters of carnoullage and evasion. A large flock of birds will be quietly within yards of a man passing through the forest, and never be seen. The Wild Turkey is truly a native bird, unique to America. And it is the unique symbol of the greatest native whiskey in America.—Wild Turkey.

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WHY MAN EXPLORES



Sagan, Sagan, Arthur C. Clarke, Ray Bradbury, Philip Morrison, and Norman Cousins reflect on cur intractable curiosity about what lies beyond the horizon

PHOTOGRAPHS BY MANFRED KAGE



Since the bird Spatie cound into obtain dozini yaera ago humanken hisi embarted on the probasilise of displanation. In basing Earths more and all the planation known to the accound— hierary Versay. Mare upper and Statom—have been or armond by our Verification gastercraft Wayapat 2 a non-traketing and fembre remond a 1985 interdepage with Unance.

Why do hisan alem month becken to to over "What is the large of september the test of traversing unknown regions? Why do we want to go out them? See prominent accentable and authors accentee there aprecised dists and authors accentee there aprecised dists and authors accentee there appendices from the descent new works.

CARL SAGAN

Can Sugars incommune with me US sense program motices a hading roke in the Mathet, Wang, and Wyagter inscense to the planets. For which he accurate the MASA, Media for Exceptional Socientific Achievement in the following essay Sagan mains the connection between explanation and harma programs.

Within the wast array of worlds in our solar system — which we already know to be a fascinating collection — There are bound to be surprises.

But planning measure are in francial trouble Dymany standards however such measure an interpretent For southple the Mannier Jupiter/Behum prote cost about the storts as at the American encode that down over Vertram. The entre cost of the Vertra measure to Mann equiled about a Schight of the Vertram War

The identifiers of kuch exposures any work and it are in the increasing. Listed thereing our mightering work is the increasing our mightering work is in the based of the listed the increasing our mightering work is the increasing our mightering work is the treasing the listed the increasing our states and the any states in the any states and the any states and the any states and the increasing our states and the states and the increasing our and avesome compared to the differences that evist among them

BD DBK Vecu straining service There is a graph peed for excluding straining report on Earth' if powerty, sinvastion and report on Earth' if powerty, sinvastion straining the there is the service of the service straining the there is the service of the service straining the the mind and the service straining the service the mind and the service straining the service the service straining the service straining the there is the service straining the service straining the service straining the service system we find out, and make batter who we grap the service straining the service system.

JAMES & MICHENER

A staunch experime of America's space program, invested James A. Michinere onnes on the IMSA Advisory Council An this following assays the author of outh bots deling provids as Hamilton, The Source Borns, and The Covenant writes of the two choices leaving away suggest

I have always believed that an event has not happened until it has passed through

Markner cost about the same as all the American arcraft shot down over Vehram Viking cost about a fortnight of the war. I find the companison poignant Ma versus death, hope versus despart?

the mind of a creative ambitiation to explain the explosion of approval from with the value of the explosion of the energiests who set around completes at right to recount the hereics advectory of that they Those advectories really due not hoppen until they were cipitalized into words and comprehensions.

It is therefore uncertaintide that can be the termination of termi

When I was a little boy in a small town in Pentitylvania, past my door ran a remarkable road. To the exact went a quester mile and stopped dead. To the west it was limitloss. It eart all the way to the Pecific, and Them there to Alse and the entire work's Alse of mill Hooked within the and work uncertained its two cirrectorial—Arminal and unterential—and though how cover with would be for a human tarring to device here the 5 the exploration of the assamp portunes of the administration is not an attention. And these continued bits is that wavelened and this entity upon a need and a completely of the auth is chose the weather man.

Witen one deals with exploration one has to be aware that in every generation field field of exploration comes to an end we have done it we have obtauted the possible With Darws we explored the begroung of ble and the characteristics that modify it.

As this lipsch ends we start correcting new We say always at the north correting. Suway at the bogmning of some register of the same structure of the same register of the same structure of the same line in the same is built of the same were know success we lead embilited do not recognize that it stands merely as a do not recognize that it stands merely as a same informating peaker more complant mask infinite than 1 their we do only half cury bo

It is the land of threshold that has phage And it is made the logical is law assumed, And it is only one of the small number of thresholds that see leve on registrow that gate the ultimatic bapacities of the merit? How do define operator? Which registrowers is descelly, are letter than the one we spond? Tam's operator? Inter the one we spond? Tam's pointer that the operation of the second to call the second our call and the operator with the operator of the term before the operator has a before them before the activity of the operator of the best characteristics of the best characteristics

ARTHURIC CLARKE

By the time ha was takensy-verse acorace deters mode Artimiz C. Caken was alnearly charmen of the British Interplanetary Society. Manknit harr an editopetion to control the solar system. Cable says, and man is deatmed to be surposed by what he finds there

The formation of our knowledge is moving invertably outward. It has interady emtoricated thermoon We shift have agreed dual to hear about the infoor and there will be many auspesse even them. I'm sum, But the forcher is moving on and our weepond is changing with it Were discovering and this is a bid supprises—shift the move and this contemplay being environtion classification of the placets, and especially place test.

Encourse by Cael Bagan and Ather C Charlow and majoriel feet Warm and Tai Maneel Huas. (2) 1223 by Happer & Rose Publishens, inc. Teccourse) dy permission: Decorpts by Janeer A. Michael Ray, Briedbary, Philip Mannan, and Vannin Colonis are adapted from With Main Taplinas published by Hit U.S. Conservinest Printing DF. Her, Washingston, D.C. Enniegt by Rey Breatbarry (2) 184 by Hity Bootbarry.

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FUTURE MAKES A PERFECT PRESENT

THE SOUL PAINTER AND THE SHAPESHIFTER

in alien's deception provides an artist's muse

BY ROBERT SLVERBERG

It was a surfail of perfection. Fit that drive the posit partier theoph Namie from the crysalline chies of Caskis Mount to for the dask forces of the western. Our perment. At we like he had, of fixed amid the wonders of the so doubt investing threelings like so

y Crisis according to the mands of his caneer exinging one sold of splendar acother every few years indumin was his native "the first ballweates were mos of the Fiery Valley, persuals and paesocare

AINTING BY CHARLES PFAHL

with the religious of putth- and, there he devide conversion in manabolic Description of the tables patient, and all sets were here conversion of the sets pages of the and a good in the sets pages of the sets were here conversion of the sets pages of the sets the set here conversion of the sets pages of the sets the set here and the count of the Conversion of and Loos Theory. Here participations are also that the sets of the sets pages of the sets of the sets of the sets of the Conversion of count locat the here. The sets of the sets of count pages of the sets of the sets of sets of the set of the sets of the sets of sets of the sets of the sets of sets of the sets of the sets of the sets of sets the sets of sets of sets of sets the sets of sets of sets of sets the sets of sets of sets of sets of sets the sets of sets of sets of sets of sets the sets of sets of sets of sets of sets of sets the sets of sets of sets of sets of sets of sets the sets of sets of sets of sets of sets of sets the sets of sets of sets of sets of sets of sets the sets of sets of sets of sets of sets of sets of sets the sets of set

The moment of crisis overtook him in the gardens of Tolinger Berner. The Control had asked him for a suite of paintings of the gindens to decorate a pergola under construction on the Castle's run.

Hardle exa Jappe to compare the logical methods on the the anomalies of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of the sector of the theory of the sector of

And so that day in Dunitiens ha purcharged what he needed and began his journey tothe kewlands He keyling pessage on a pdgmm sing saling to Piliptic on the continent of 2 model—he entire strator of which was wilderness, who which Lord Starrot had ones the aborgraf Masamorphs after these final defeat four trousand wass before

Nome expected the port of Plipick to be a matches bit him regreen kanned out to be an ancest and increment explaned matchematical plan. It was upply but not matchematical plan the set of the set of the set of the set of the network up the Zime X a town called Wert herropslavely bits back and and exhort ma. herd wappor into the towards to be south when be had matched to be used to be

Copyright O1987 by Agency Ltd 65 CMM widentess that he could see to tace of owitzation he halted and built a cabin beold a flowfill cark stream it was these years since he had left Castle Mount. Through all the journey he had been alone and had spoken to others only when necessary, and he had not painties at all.

How Reality boggin is have Providence of Control Manual Annual Providence of Control Manual Annual Annual Annual Antical y controlled an antidem sweet antically controlled an antidem sweet hints: Buch now his was in a ren level when the col was beginning and yielding of control and the same and the system of the same and the system of the antical set of the same and the system of anticeless and another set of the Coll and barries and shorts earns also coll and barries and shorts earns also coll sets barries and shorts earns also the state of the solution of the same coll and barries and shorts earns also coll sets barries and shorts and shorts when coll sets barries and shorts and shorts and coll sets barries and shorts and shorts and coll sets barries and shorts and shor

He faced his blank carvas, drew a deep breath and readied himself for the trance. In a moment his scul leaping from his mind would import the unique intensity of his vision on the fabric.

Tabled is signaports through the univertimation of the signaport but also be remore presented and according of the signaport of the signapor

He lost track of time. Four or five or perhaps to: weeks - how could he tal? -went by before he saw his first Meterroph.

The encounter took place in a massity meaclow two miles upstream from his cabin. Namile had gone there to gather the succulart scatlet balls of mud-files, which he had learned to mash and scatt into a sort of bread. They give deep and be dug them by working its arm to the stocklos mit the muck- and geopre about with over check pressed to the ground. He care up adopting the data and was started to thin a figure carinity working thin from a distance of a domini works.

He take near a Mean rep. The man bear barries theory of Mean rep. The man bears of Mean rep. The man bears of Mean rep. The man rep. The main rep. The main

"Hello" he said "Do you mind if I gather builts here?"

The Metamorph was slend

These the cable down the struam (im Thesen Namie Luced to be a soul painter when I lived on Castle Mount

The Matamaph sejarced hm solerney An unecable expression flokered across its face. Then the Metamorph turned and aligibed gracefully into the jungle, variabing dimost at once

Namle shrugged. He dug for more roud by bulbs

A weak or two later is mail another iteramophin operating the same one, the timewhich is was suppop basis from a vertime which is a bismoon tag. One more the abortgine was wordless interacting the same same of the interaction of the same one-length atternor. Associate there is an interaction that or is associate there is an interaction that and same of the interaction of the there is a same of the interaction of the there is a same of the interaction of the there is a same of the interaction of the there is a same of the interaction of the the interaction of the interaction of the the the was also one of the interaction of the interaction of the interaction of the interaction of the the the was also one of the interaction o

A ter sing allowed to ease coloring thereads and allow terms reares that the thereads and allow terms reares that the terms of the best and the terms of the terms of the best and the terms of terms of terms of the terms of the terms of terms of terms of terms of the terms of the terms of ter and our singulance dant is set? It see that down inspection. Set applying the set of the set of the set of the set of the line of the set of the and the set of the set of the set of the and the set of the set of the set of the set of the and the set of the set o

Namig hoped for a time that it would intum with a flask of wine, but he did not to be a man of goodwill who had never even paint one. He had been thinking of langed the gap to the psychosonshire carryise and macribed on it those images. heatend opencies designed to win the contact. In time, he thought they would grow used to terr, they would begin to

But in the days that followed he saw no more Metamophis. He named the format passing hopefully into thickets and down more weight latter of trass, and found no one if to decided that he had been too forward and had forthered that saw—wo



much top the malwolance of the montifues Metamorphetic – and other = while be cased to expect further contact. It was detuning the fact not missed compenionsing, when not is secred likely but the knowledge that there uses intelligent beings somewhere in the anal. knd/dc an expenses of localiness infimities we not addr to beer.

The starp and earn day sential weeks was service and the sential weeks was serviced and solution of solution land. Tomes by a natural dain of solution land, so the sential dains of solution land, so figure moving quickly through a dense was of businessed builties near the above of businessed builties near the above of businessed builties near the above the scatter of the water business of the senter of the node. Water has a senter the solution of the solution part of the solution of the solution business caugit sight of it down in a few movies leaving caught eard parts an

Nermie stopped short amazed for the other was no Matamorph but is human worsan

See was senser and young and notice, with thick, auben har name shoulder, small, high breasts, and bright playful yes. She seemed atogether unaffed of here a forward spite who hold obscuttly en pyedleading him on this little chase. As he stood gaping at har, she looked him work uninamedly and with on qubuent of chase.

triking laughter sead. You is all scratched and somil Can't you ran in the forest any batter than that?

Lidich I want you to get away

"Oh I search gang to go far You know I uses watching you for a long time before you noticed me. You're the man from the baber, potr?"

'His And you - where do you live?"

Here and there, she said anly

He stand at her in workall Her Douby celligited him and her abmieltaness assumed him Steinight ethods be a her formstorn he thought where bad she come from? What was a human being, nalvid and elone doing in this primordial upple?

Human?

Dropate rock, Nernier rendered with her activities, stateging of a chick with the disease, only one of a chick with the disease, only to week apply and processe the scale seally. Near-showing thesi here, the scale seally near the scale scale patients of the projection of the scale scale region of the projection a scale of herefore produces and dispersion ones benefits of the scale scale in every degree. And your may a traditional model on the scale scale scale scale of the scale your more instabilities of the scale s with a conscious act of twith in the hone that that would make her be what she

"What's your name?" he arked

Namia Where do you live?

'Then there's a human suttlement not far

She structed "Live by myself." She came toward him. He fait has muscles grow ing taut as she moved closer, and his skin control to be blening. She tructed her fingers lightly to the cuts the wree had made on his arms and chest. Don't hose

They're beginning to I should wash them

Yes Let s co back to the pool. I know a better way than the one you took. Follow

She parted the frontie of a thick clumo of hind her delated by the ease of her back and buttocks. He plunced into the pool a moment after she cicl. The cheld water soothed the stinging of the cuts When they almbed out he veened to draw he old not date They aptawled on the motes bank There was muched in her

- He said 'My cabin and tar
- Would you ake to go three?" .

I was born on Caste Mourt Do you know where that a? I was a poul partier at sensitive canvas and - I could show you I could pent you Sanse I take a picea look at something. I seize its ossence with my thing of my own and hurl is on the canvas. I capture the truth of it in one quick bises of

The thick funguouse mass was like a can he was still certain that she was a Metamedened Metamorph skin to have, or that abon farm the moment she was in his some 70 CMM

Hot even were closed thereins were earlied her longue flickored between them like a serpents, she was wadeto. In terror he much the way the tigsh of a young human women altiquid feel. With a post, little niv else diamitiano instant the orospigue important long-imbed and nosaless, but he showed the thought every tercoly and gave herewit

side by reds, hands clasped, saving right culck sheep speride to wash the sweat from their skins. He operad hat wans even tusty and found her watching him with keen curiculy

I want to paint you " he said

Not now Tomorrow You II come to my

étile ceased to fear that she would disappear had come Her questions subsided, but he chose not in take his turn preferring to leave her mysteries unpercent?

I haven't fired to paint at years it's imvery much to paint you

I want very much not to be plented, she

No" she said gently She rolled sway and stood up. Part the juncle Plant the

She said. If have to leave now

I already have Here and them in the forest. Why do you ask these questions?

Twart to be able to find you again it you d sappeer, how well I wight where to look?

Wil you come to me tomorrow? To my

Ithnk I will

mystery surrounding her throbbed in his

mod. She had told him nothing but her that sho, like him, was a solitary of the angle wondering as the whim game but he doubted that he could have lated to detect in all these weeks, the costence of a human wikage nearby The most likely explanation was that she was a Shapeshiftman Much as he resisted that dea he was too rational to search it completing Rut she human. How adept were those Meta morphs at their loaratemetions? He was tempted to ask her outsight whether his suspicions were correct but that was fooishness she had answered pottion He kept his questions to tempol! She partly pulled her hand free of his oraso and stepped loward the fem bordered trail and

Name wated at his paten all the next day She did not come It scarcely surplead ten They meeting had been a and space. He did not expect to see her again 37ward evening he draw a parward set it up, thinking he might paint the view from his cabin as twilight purpled the forest against the heavy horizontal of a thick away Nothing about this landscape . needed to be captured by art. In the moreing he thought, he would hive upstream past the meadow to a place where fushy spikes from a deep cleft in a great rock a

delaying his departure and by noon s garden plot instead-he had begun transpreens he are-and that occupied him for hours in late attempon a milly too settled over the losest Ha want maide and a few

maybe she had been datano aloop the ceth Joromserit dicome she seriority

This is visiteriday after start launthran wine? I found some of this I had to on a long claterics to get it. Yesterclay

It was a scong gray who the kind that ackles the longue with its sparkle. The flask had no lebel, but he supposed it to he Mount They drank it all he more than she-she filled his cup again and rosin - and when it was gone, they went outside to make love on the cool clamp door afterward. She woke him in some COMPARE ON PARE 199

cabin, and then I can-



With wry visual plays, Japan's Beabi design master delights Western visitors but befuddles his countrymen



LAND OF THE RISING PUN BYR BRUCE MECOLM

peaktiv or common sense that the sense that the sense that the sense of the sense o

PHOTOGRAPHS BY MALCOLM KIRK

€The interior decor of Fukuda's home resembles a set from Woody Allen's Sleeper.●





sical objects are yet another source of enumernent for the antat. At a food factory, he designed cherrs out of huge plastic tormstoes

The means the designed under build in degrade bitmakeet by encoded and the second of the second of the base of the base by a solution of Kaminitasses. A solution to do not a solution and is started at the supported entrance, the adaptive product on the the entral index as indexidence means that part of the Woody Atems Sequent A huge, pleters conclusive and means the second of the entrangement is a candida and plates the entrance alore to main the entrangement begins when the second on the dot second the entrangement has a left physical plates to entrance and cables part on the adaptive has a highly own plates the second and cables part on a dot built of the physical plates the second and cables part on a dot built of the second and the second of the second cables part of the second and a left part of the plates the second of the second cables part of the second of the second of the second of the second cables part of the second of the secon

The word sample (dog) is transformed into an angel when summed (RD degrees Similarly a content previous becomes a witpuoso individu in Encouri (derectly above and right). One of the largest process in Failude's collection. Encouries a part of a some of mestimolyhous y musculars captured at offleren stages of a concent





The greatest joy for me comes when I discover what my creation will be 9









Teelve years ago Fukuda bogan ha sensa of aculptures that use combinational geometry to oreate their sophisticated fullescent Heritika, tather simple range of a first week from its sub as a cubation gave way to more complex designs, such as the Japanese characters for main and women receased as its fil opure their simbolac

They and works received to a light problem. The problem is the second work of the second seco

Portnet of the artist as a young table "Aukute (kit) posses beands table log vito which his has phageablue poll-porting. Work is this of Chaudia s Jar Alter Haben be cause is used near kets used by Edgar Ruber. Japanese cherachers for miniard logens (above), when weard from the sale-become what they synchrotize


, BY ERICA JONG

If you decided to become the world to one a will in our covens (followers of Gerald hideous and old (with a julting to Perafenana who believe in was uncloubtoolly their size all withfinall refers to the use of were reputed to be caused supernatural forces to bend by bewitchments

Gardney), covers of other huge makes and a Mysteries and devote be denounced in times when

PAINTING BY H. R. GIGER



Historically there were male writches, too. shouch the notion of the witch as male nbly uply bewitching in her physical graces of hideous the witch menaces men. for her beauty both blinds and binds timized by female power-a conduct de-

Perhaps that is no because we associate women's creative powers with the manupuwe multively understand that during the long percuries when women were the drawn to wrichcraft as a componsation for

our notions of the Dexy are attorned by male a relatively new and may not neces-Copyright © 1987 by Encausing Any the Assa sanly represent "progress." Five thousand smashing book burning and the deliber-Most neepigain groups have perced to-

owher they beliefs and music from fracmonts of ancient religions interpret wothers mitted magoal traditions. But underland reliencus intual that species relevantly to to-

Whill landences unify hippigane? A call her the Mother Goddens Demotes than as spurs to create and prace and that sell ease our individual promises through life (and death) and at the serve



Sometimes people are altracted to cless, to shock they perents. But there are denate to acknowledge the potent force of screpality in our lives, the desire to pupsifion the failing of organized releases the de-

The Wilch's Foundant

A whome equipment must be handmade comes with time, to take on madinal propthe user's vibrations. So it sometimes the magic within lise?

The consecuted place that bolds the within a magic circle drawn upon the

Certain traditions recommend that the allar contain a statue of the Mother Geriworshipur of the universal powers these . houses represent. White candles and a arkind to sponsoril the elements, along

Wand

The magic wand so familiar to us from fary takes and obviously a phallic symbol sected groves figure in many mythologies The most efficacious wands are made of Mother Goddees-wellow rowest hazed removed) sended to a selvy smoothness tained with cotton wool and bicupht in life that the wand be insorbed with a people the mathe given to the witch upon her mitig crased as a tool of the witch's will The stronger the writch's will the more powerful

Ashama (or Alhahma)

A black handled, double edged dagger wetchis power and is used for many rituals Also clearly a phallic symbol when

Rothne for Rothnell

A white-handled knife used to make other megical objects or tools or to increaletters or symbols on erood or was. Both police and atheme must be used only for music

Cord for Cinputanti

The magual binding cord that the witch wars around her wast and uses for symbolic binding intuits of all sorts. It is red rare feet in largith, and plated Natural matanials are preferred

An even calider or kittle for emparing Sabbath feasts, marginal benes, and poters Sometimes the fea is kindled in the raddron shall. The calidron is such a simple of the loss about witches find it a graduitous sometide (that some very powerful) protifores all be cetter why powerful pronary household pole (consectabled of ourse).

Chalce for Drysking Homi

Container for gamflood whe or water in some witch fractions as I have noted the society manage (social union between the incurrate god and the womthput) as performed syntholicity by meatra of the plugging of the advance into the choice above

For fung to the Witches Subbitt of the respersing the Nouse Model of transform, seepersong the Nouse Model of transform, backshorn and that also a withvider of the two working of CAI of of these trans-have magooil gropewise that can be initiated the online that and the initiated model and Gard of the Nitches assures that the boom has always them austances with the gaving and bacting of withing according to Marky

Various gampies or withher books of popels mestion neoklasis having mapped poperties Borne are guite simple composed of seathers, scorms results and wood. Others are maked or drafting bluegless beecks (of this soft wom work today houghout the Model bard as a protection against the five layer and others contain cascast monous which are granted and add with the work out.

This site book the witch weaps to record at that are has issuered of a witch or at Spatial movements in the index that the star neocords of in it is benefitian the book fatel be reade by the witch. The moments index paper or particular to a pagas. Taktion activates that the book be destroyed upon the witch be able The such means any witch at the book be destroyed bearing time or witch coses, the saft that there are based on the such as the such as the means any such as the book bearing on the means any such as a such as the such as the means and based on the such as the based of the such as the such as the such as the means and based on the such as the such as at based on the such as the suc



It's a bit more expensive, but for an impeccable dry Martini, the world comes to Gordonk.

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Sonal A C adapter

on Pakt Phylipis. There's one

Canon Palm Printer

class, the nonproselytizing nature of witch

Corgone Bags (or Charm Bags)

one wakes to affect-usually for if in preobjects which may be such throas as shoes nai clippings photographs locks

The charms in the bag are usually

Other charm begs contain cernstonee signi contentmart

Gova's writches wear the birmless corrham-though the is probably a later at of dealtry From 1440 through the 1480s inveighed against it associating the point

deception of dyeing it red and shrinking if

A cape or cost conterning magical

legends. The most formas example, of tourse, is the occil Septend wave. The works cape, lead that of male sourcence registrate a second source of the second source black, with negotial equility of the source of whether the second source of the second source index sources and source of the second source metric shows. The whether cape signifies marks adven. The whether cape signifies marks advent the whether manufally of the power of marksmoothiss.

Some chronicless speak of a girdle of pollballe strung together with a magical pouch hanging in their match Thes pouch costans the subth schemes and amalete. It is mask of skin, and we recognise it as a variable of the conjens or chem bag favored by vector magicane.

The which is gloves the task to be of catskin, with the fur inside. Could have addformal spectration of the which with the data darwe from the calls heatory as a testined arms? in Lggy? In the Model Again the call was attacciated with the davi. This probeby is further proof that the case of new ones. Sweet

In participant of briester Australians the technicar other association with the works is the postavian — statul long tool show whole address and share and a statul long tool show whole address and shared to the anise is powers of the program during the address the with appropring the water Against the with appropring the water Against the with appropring the water Against the statution being a status of while the status of the address address of the status of the status of the status of the status of the postability processy because of the feasial and dislocitation contactions

Garrier

The optical as a spitol of distanciation to discover the same participal in the same part part of the optical and the same part part of the optical and the same part part of the same part the part of the part part of the same part the part of the part part of the part of the part of the part part of the part of the part of the part part of the part of the part of the part part of the part of the

the garter to denote her next. Concerning panels worn by wich gueens are known as baggins. They are, the crown the garter, the next teach the bracelet (Thin teat as a write-cult bracelet of silver engraved with sums and symbols of the cost).

Consemptionary writtes usually work in covers (propage-dathermits of the certh or faith), which are backbonisty 21 in number group begins by covering the certa in scale group begins by covering the certa in scale mage, will couch where power will be concentrated where goods and goddesses will be concluded where goods and goddesses will be advected in counter and is cert with the advected in counter and is cert with the advected in counter and is cert with the advected in the glace behaves the atternet.

Here are some of the most agrificant musis that coveris perform

The matter terms unversely, proceeds of the convert. The retrievance sense dependent on the grant build in starty minimum (a sense the sense of conversions dependent terms and the sense sense the sense term (a sense terms). The sense sense term (a sense terms are sense to the sense terms (a sense terms) and the sense term (a sense terms) and terms (a sense term (a sense terms) and terms) and terms (a sense terms) and terms (a sense term (a sense terms) and terms (a sense term) and terms (a sense terms) and terms (a sense term (a sense term) and terms (a sense terms) and terms (a sense term (a sense term) and terms (a sense terms) and terms (a sense term) and terms (a sense terms) and terms (a sense term (a sense term) and terms (a sense terms) and terms (a sense term) and term (a sense term) and terms (a sense term) and t

These elements of witch instation are known in mery regious institutions. Pointer Catholics still kear the Popus ring Both baption and the emaiting of cancels are arrong the mast holy of ancient state watches near invation of fault installing watches really included these things the kear of raining to particularly or whether they are projections and distancies of the part of the information element.

The high pressus of a wrich coven takes the power of the goddess into herself becoming in effect the goddess for the duta ton of the shall

The site is performed all microphics the start right of the full moon. This is the origin of the sam the websize your. This which exclusion the goodbeas white hereast them is becomes the goodbeas incareate The goodbeas is the whom we call the Their Boodbeas, the Micro Goodbeas - with the mean phase whom we call waving Boodbeas and waving SL and waving Boodbeas and waving SL and waving Boodbeast and waving SL and waving Boodbeast and waving SL and waving Boodbeast and waving SL and waving SOON YOU'LL BE ABLE TO GET YOUR FINGERS ON CANON'S MOST AFFORDABLE PORTABLE PORTABLE PRINTER/DISPLAY CALCULATOR EVER.



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art wholes have different methods of drawing the power of the goodlaw into them evers Mediation chanting during and "arging may alibe used. The objective site osch a siste in which human and dwene merge for a time within the person of the help operators.

Responsible Cone of Power

The order of power is a margehor for the will of the group the payotic power of a crolle of Bie-model workpains, gaintawill law which is cleant they helped preven general improvement he same and is of saming the order of power against Alost Helming he order of power against Alost Helmhelped destryon the Spanish Annotaking the same meaning. Perhaps the RAF also helped

Wohes raise the cone of power by means of dancing, singing, charling, and modifaling.

Self-bisssing (or Self-deckcallor)

A personal that whereby the which ded tables hereaft to the service of the good dess and the Homed doal timay be done with a coven or before one's own attanuang of income and candies, or elias where where and self it is done in thinks of great need to receivate the self to the path of writhment

Noted contemporary with Margot Adlar relates a self billiosing ritual originally devised by Ed Pitch an American neopagan it is performed in the nucle in a transul place using salk water when and a volve candle. The devotes stands upon spenkold salk light the candle here with water and write anortis first the eyes, than the roas, than the mouth them the breast, then the kins then the level, while making the before menorable.

Blessme Mother for Lamyour child

Blossed be my eyes, that I may ase your path

Blessed be my nose, that I may breathe your essence

Blessed be my mouth shat I may specie of you

Biessed be my breast shall may be bathful it my work

- Blessed be my kins which bring loth the life of men and women as you have brought forth all creation
- Biested be inyfeet, that i maywalk in your wards

This is a powerful, meditative and heating islual in spile of its simplicity

Other mass an enclosed in various books dealing with writeraft, from mails for controlling men to invalid for realparticular, after one has been taped. There are fertility music and contraception mails survives of voorboo and fok mage, and early hereful medicing all of which are subserved involved me come of withmut.

Many traditions forbuil the decicaute of secret nins on the assumption that secrecybreeds spintual power Also witch task



Bons vary greatly from country to country from coven to coven. All writhers however would agree that which raft was—and as—a pspea, ocstate religion in which the goods and gooddeoses are before served by merrired than by mountful field.

As the farthful of the old religion say

B 85590

The organization of lestivals in the witches year seems to data back to priognuclivity immes and seems to be knyed to sessional changes changes in the surfs position, and the periods of lertility in atmatic the two greatist biolidays fail in some and seturm.

May Ele or Beltane, occurs on April 30 It beletates the relaministic planting, the staum of the sam, and the occurs plenitude of summer InEngland that heat-two wasknown as Roodmax, and in Germany as Walpurganacht The following day. May 1, way also the day of the Roben Hood heatwals in Enabled with the day of Mayolen.

Hallawan recognizes (into seves in energis) to survive interes. In pro-Chinantime great bothes seen as to skirtube the survive interaction into the sevent water to interact interaction of the When the Chinatena chinaged the autom ingered. Thus Dector all has warrowy believe the survive interaction of the believe the survive interaction of the believe the survive interaction of the behavioral get the funds of the survive of the survey to be survive interaction of the survey to be survive to be the same to be further to be survey.

The four other festivals of the wiches (great but not as important as the fore control are

thoic also called February Eve (January 31) This is the winter holday and whother pentity day to summon the sun back

The vental equinox (usually on March 21) Thissis aspengholiday recognizing the prayed-for return of the sun

The midsummer holiday (usually on June 21) is another featival of edurth and ferbility Lugnasadh or Lammas (in August) an

early harvest holday Yule (December 21) was a need the

Yule (December 21) was a need the holiday that was later changed into Christ mas and set on December 25

Chaptan holicitys were intentionally placed atomis that had been salered since the earliest pagan days. The Chaptana knew the page and usually retrained holi days ratead of renventing them.

There now most of the systepia associand with Ordinarias and Easter are pagan rather than Orinetan Yule logs, bedetood upstory in the sky eogs and burnes. The works feativate of tysts, includes (antiked post) in the sky eogs and burnes. The deal area appeared in Charlins and East works (the system of the Horned Ged area appeared in Charlins and East tong for users when we do in redy how west they mean in a sense we all remain pages at here ICO



is aging caused by amino acids? This emment endocrinologist believes he has discovered the "death hormone" - and ways to obstruct it

INTERVIEW

NNFR (

die because we are programmed to do so by our evolutionary hertage. The mechanism. At specific \$mes in our lives our genes. dictate the release of a hitherto-unknown plutary hormone-or femily of homones-for the specific purpose of ensuring theil our physiological detenoiation will take place approximately on achieckule II Dr. Denekla's genetic-hormonal clock-of-aging" theory proves to be valid- and his excerne experimental results of his research, in terms of increasted, high-quality human longev-

Denckla, a native of Philaderphia, got his first Harvard degree in history, before switching to medicine. With his M.D. in hand, he opted for research rather than private practice. He stayed briefly at

meet a distinctly noneidenty forty-sover, W Donner Harvard Then his research took him to the National Institutes of ward again, and shally to his present benth at the National Institute eachhave abuilt-in clock of aging he believes, we can learn how it works and subwert a for our own ends. Denckla's work has only that is not surprising. Denckle save "isince what I'm really doing is But once I have in hand the purified homone, assuming I dim representation of respected to the antidote, my colleagues in the agence Earl will choord liv as scientists hwn moreholit done throughout



 Throughout history hormones were defined as being good for us, and here I'm saying this hormone may be part of a self-destruct program. It's a bit like being against Mom. medical helory accept the proof and samply ravise their own views accordingly if I tai - well, then " he trais off with a shruc

Dentata as an avar anadro of screenos fofor and an entrulacitic salar (here fixering off or 1 as Woods Hole, Vassachussen) and guschainer He balagner functioner and has also designed much of his own instrumentations and some new babcatary tachtrologas—on which he holds a number of pations. He is the lattice of these children whose motiere Nanha Dencola, a well-holown backliere nannaciment

This inferview was conducted at Dancklass forme in Wastengton .D.C. and at Woods Hole by wasen science whiler Albert Rosenfeld author of Prolongewy

Other: You have a noval approach to aging research. Can you describe (P

Denote Perhaps the best way to begin is to go back to the way I decovered it or I should say fell most because at that the I had no perhaps release in aging 0459. Weak statements with termanes?

Detects with parts through the through the more, We do have some for the through the more, We do have some for the through the detect of the through code to a through the balageant. Indications of utwards the balageant, indications of utwards the balageant, indications of through the balageant, indications of the series to any party well. Which through to detects the to balageant that when the series to any party well. Which through the detects the to balageant that when the series to any party well. Which through the charge with advances gas it have strengt when that it types that when the the series to any party were of here the Balageant model of the more than the top the series of the series the series the series of the series the series of the series the series the series the series of the series the series the series the series the series of the series the series

Other in other words, did the blood level of thytoid—the assistivity of the hormore tay the same? And with party of thyteet in orculation, the tissues and organs amply bouldn't use it officiently as the rat grew ofder is that convert?

Denotes Exactly The structure as became The hypocal were way and the to but he orimed coloido. I inside use id at 1 menet some instructure or the structure and the structure instructure or the structure and the structure that began to startly me it the depaid in that people to startly me it the depaid is spannet instructure was most disspannet and publicity was most disspannet and structure was most disspannet and structure was most disspannet instructure of deviagements. It menus permits prosperative the structure and the spannet instructure of deviagements in the permits, prospers that was conclude as permits, prospens that was conclude as permits, prospens that was conclude as permits, prospens that was conclude as the structure of the menus.

Crimi: Why is thyroid hormone so important. anyway?

periods Well is a one of the two or three periods borners that seem to get inwheel in all of the body's mayor systems it has some unique functions of its own to be sumit but it is also one of those special Intrinses described as "permission" Train in taleves other homonopa to de their own fring. Thyroid also permits growth hose mona and portiona is own rise or easimple Moreover no one can be farite written thread hermone, ovales do not inspond proparity to the normal pocket that terrates proparity to the normal pocket that terrates protecting the second pocket that terrates weaken, pocketation filts cit, a whele your work of protecting segments on own?

Onvel. Thyroid appears to have an overall regulatory function than?

Denote Well not early regulatory to examine the body work is the and man introvery size in the body work is the and man introvery wells to be a second to the second to th

Other if which the pans in rats also happens in people would you expect that is thyroid effectiveness diminishis over the years there would be an accompanying decline in factoria in the whole organism?

Denotes That contrary is flow and the use of inter-separation programs that is have been provided by the separation of the contrary and became and the separation of the provided by the separation of the contrary with respected the proteins the denotes the separation of the separation of the contrary became and the denotes the separation of the denotes the denotes the separation of the denotes the den

A total, instantaneous wipeout of the plattary in the acuit results in death usually within twenty-four hours

Grew There have been subject to the detrained thread without engenerable for the detrained thread without engenerable for the detrained thread without engineering and the splander thread without engineering and the behavior determined and and behad we have been as the splander thread and the behavior determined and the splander thread determined and other tesserial hordered with spore repermentation and with the det of the out the winder of phatery but thread out gene thread thread determined and the thread determined and other tesserial hormeters to in the thread determined and the thread determined and the tesserial thread out and the determined and the tesserial thread and thread determined and the tesserial thread and threads and thread determined and the tesserial thread and thread determined and thread determined and the tesserial thread and thread determined and thread determined and thread and the test and thread determined and thread determined and the tesserial thread and thread determined and thread determined and thread and thread and thread determined and thread determined and thread and thread and thread and the test and thread and thread and thread determined and thread determined and thread and threa Dentak will all ac could allot to provide for a long parol of them was no other eccentral formanies—both of them adversal allohasis—including the rat varian of conlations and thread more my parameters that maked there paratime was because to water adversal formation in young annuals that adversal thread paratice was been and adversal thread paratice was even in the second quies obvious that we were in the second quies obvious that we were in the parameters of a new policity foundament to be a second to the second quies of the foundament of the second quies of the second quies of the foundament of the second quies of the second quies of the foundament of the second quies of the second quies of the foundament of the second quies of the second quies of the foundament of the second quies of the second quies of the foundament of the second quies of the second quies of the foundament of the second quies of the second quies of the foundament of the second quies of the second quies of the foundament of the seco

Orwe, At this point were you thinking in terms of aging at al?

Interesties the term is more constrained and the process of the second s

Own: And old the decline go on from there?

Denotes it may be do 'We potched an ago once and load hat through the lass gene of the inmet on the particular acady insues that the second second second second second particular academic academic academic academic second material second second second second second through which does in selful and second through which academic second second second through the second second second s

We how below had, both two inner use of the local had both had both two inner use of the local had both the local had both the metric and a local had both the local had both potenty to see shall have in the local had both the local had both the local had an invest-dependent and had be local down the local had both the local had both the local had both the local down the local had both the local had both the local had both the local down the local had both the had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the local had both the local had both the had both the loca

Ones What's the latest age for the sale

removal of the animal's patatary?

Denokla, Twelve to eighteen months. This operative scholdy rate is loo high if we was beyond that. It is a highly taximatic procedure.

Own/ What kind of functions have you been able to restore?

Denckle with as one example, the budget of the post to local to dated. The earth is the sorts in the local to date the sorts in the sorts in the local to date the sorts of the the local is profit by a local to the sort of the most is a profit by a local to be an earth new months of age. And for more than a part of the local to the profit be at local with the profit beat local to at local with the profit beat local to at local component of the local to at local to a local part of the local to at local to any local part of the local to the profit local part of the local to the compotor the local to at local to the compotor part part of the local to the local to the local part parts of the local to the local to the local parts parts of the local to the local to the local parts parts of the local to the local to the local parts parts of the local to the local to the local to the local parts parts of the local to the local to the local to the local parts parts of the local to the local to the local to the local parts parts of the local to the local to the local to the local parts parts of the local to the local to the local to the local parts parts of the local to the lo

Owny Did all the suggest to you that the

We were able to restore the rats' functions to juvenile levels and to hold them there indefinitely. I don't know of any other method in genontology that's done this ?

plutary must be releasing another hormore that keeps the thysoid from doing what its supposed to do?

Denckle Yes The simplest must straight forward explanation was that we had run across a new plurfary hormone

Other is this the homone that people have been reterring to as the death homone of the 4000 homone?

Denckla: Yes, but I avoid those designetions

Ontoi: What do you call #1

Deredar Lcal / DECD because / a multill bitly operation of the multill bitly operational definition. It is the acronym for discretely expendence with the acronym for discretely expendence since tasks there is be converd a Limerk rit so easy to call it a desh homono. Charling that is not soo early to say however is that DECD across that a since any and the active workshow the the task of the across the ac

Omil Have you already done this?

Denokla: Yes in a preliminary study we compared the life spans of one handhad

Investig-five intact sals with those of meany five rats whose photeanes we had taken out At thirty four months of age only two of the intact entrests were still alive. That's about mode-when bareant incrute ty.

Cossi: If twenty-four months suprementer solventy years of human age, what would thethy-tour months represent?

Introduct, Well, paging involves the characteristic of the service of the service

Overse Beaclas that you ve been able to relative juvenile competence, as you call in your paperer that is to row a abilities the role had when they were much young in a in another of system? Nou memory relation of the acts as one. What were some off.

Details from it most the scale a late bilds "Pormat or late and expension bilds" Pormat or late and expension ments of age. And most of the such has been with leavaux and the scale of the scale and a scale and the scale of the scale and a scale and the scale of the scale of the scale and the scale of the scale of the scale and the scale of the scale of the scale and the scale of the scale of the scale and the scale of the scale of the scale and the scale of the bild scale of the sc

Duraka wie liese control bund timuus liesten deskiels in liese control bund timuus press The immune bytem comprises a system of timue control bund timus press The immune bytem comprises a while deskiel and the control bund timus while deskiel and whether in a both while deskiel and whether in a both problem in a size whether in a both bund timus problem in a size whether in a problem in the mmune systems Why?

Denckis: Well is very simple When you go to medical school, you get hit by mikestand back and look at three deseases you three trajor diseases and thissi diseases an evolved with an inadequate supply of strokes, and the consequencies of hypertension Our kidneys, for instance, get hell to deste. Dreserves in which the blood sup more than half of all deaths in the modern

mobilem it's my caureon from reading the are far better versed than 1 that in cancer

Draw Yes cancer specialists do noteas-

Denokis, We packed the T-cell-dependent peoply important in fighting cancer Wa model for the atelly to fight cancer With monit in one way or another then a single substance that blocks thyroid hormone could drashcally affect both these avaterts the failure of which kills must of us? ration is due to thword blockage. All we apparent normal function of these systeme bly complex one. Some of its kinchons are not reatored by our method, even if we give back both thyroid and mowth hormone substances. Removing the pitutary is a presence of a bad hormone

Ontel But meanwhile you're using this because you don't have the hormone in hand, nett? But if you had a supply of

Danckia Right We don't have the pure some other pitutary hormones. It takes

Great Nousaam to be apportation much are builded atound-up cow plutates to gat enough extract for testing thirty rate 1 Aut even that preparation does-in the

> make enzyme normally declines with ape and is throug dependent. The other one presumably containing DECO we found histidase did go up. If both had clockned. we made one go up and the other clown. within ten days of intection rules this out Gessi So inection them with the coucle with aging

Dentida Yes And the revolen consumpwe now have three different indices-two sumption-fail can menuc the effects of age in swereka within a few days And more animals actually laged roughly tentaly pood reason for it. I asked myself the question a outplet of vests app. What earthly good would a hormone be that tripcled the thwod, since the thwoid is obviously so important for so many functons' And the natiative arower is very area compared to hear very small body

All mammals have to maintain a restal losses And this function is thirolddependent, through ponirols like rate at

pena there is an incredible ritmene in pothesis is that DECO was on profile a horfull bore using up all this ettergy just to







BY DAMON KNIGHT

In 1987 In Wesbaden Germany, Herr Doktor Herrich Gottleb Es serwein discovered the elser of Me. The else, distilled from

PAINTING BY JAMES MARSH

prog. Diadottes was simple to manufactures and permenter in the effects "After taking under dass of the datar reddsh flagst, calcered and Revord with chinematic, and no longer aged. It was as simple as that A observed the effect and the service of the data in the watch the Herr Defater field is does of the effect in January 1887 was still within in 1980, and had lad an extension bettyl-free thousand and get handwale regisolements been thousand had does belay within

An unfortunate side effect of the discouery was that Essenses in a Gend to whom the good Doktor gave a dose of the allor in 1888, emaned twelve years of for the next of the life. Gend a gitted pectrolo player, had a surry disposition and was lowed barell but the was eventive and etv.

Once the Hart Dektor had discoversion were error the econometricide that the else in to be laken until one attained as sutable age, which valued according to the takents and where of the individual An artifacts to intainone might lake this does at twenty there whan the was at are haight of the thysical powers, a financer perhaps at forly-five on and a phologother at thy

Encouraged by Essenwarth example the British physicis John Tyrdall accouend pencial in 1683. There yaras labo Louis Passeur amounced his universal bacteriophage one injection of which would dentry any missiouling grim at the cost of making the inception feed out of sorts for about existent months.

As a result the population of the world expanded dimancially during the years 1993 to 1903, the tarth rate remaining the death rate hard talkin to a negligible figure death rate hard talkin to a negligible figure can the "hichard Borne perfected as oral contratespite which worked on both men and women and also tolowed down cats and dogs a great deat

Parity backage of the unbaseded cranknees of chicken who had had here back another and the set of the set of the set of the world and the back of having chicken the set of the back of having chicken the care pro-the world by acceleritor nation for the construction of the set of the result of the set of the set of the result of the set of the set of the result of the set of the set of the there we do be accelered. We do the set of the result of the set of the set of the there are no set of the set of the set of the there are no set of the set of the set of the there are no set of the set of the set of the there are no set of the set of the

As a consequence, an iumiter of terrogy people wret never born. These included high terra, delenge Gentwen, Aldrus Hauier, Leond Burnhei and Marking Marriag Conversely, a number of terrous people were bern, auch as McDanel (Wisson Stephen the funder of high Druch of Solfberg (11) Be Good when Yorke Gane) and Harret Longworth Tabrian the least finande Proselent of the Unset States

Early in the twentieth century somes all over the world wire plagued by mutury and dearstroor, hardly strycore was crazy enough to risk a life that might layed to contines or even with lack and maconable balve for thousands of years. When the two cave And bildes Fendmann of Alesten-Hynogen, went-Billed by an assessmant Statismus-Enparent Firmt Joant Agetradio disclarever no Settas, but Consel van Hazandont land him he would menty on banass fra naterportauted van Mohka and was het the ament thing Bent nates goot my essented to an international contenence to reactee the osses, wer nover took out

Thus the world invitend an one of labing parase and potential which is the service in the starting within world into service in 1860 canned length and passengers to the startical participation of the startical participation of the startic participation of startical partical participation of starti

Albert Einstein, of the Kareer Whelm Isstrute in Berlin, in 1905 published his equation E =mc² demonstrating that the reliciose

The popular author Jules Verrie, collaborating with the German Hermann Oberth, began to draw plans for a cosmobile in which to visit the Martians The fask proved difficult.

of Ruclinar energy was possible but the world already had abundant electrical power thanks to Edison and Testa and nobody oak any alteration to Einstein

In 1991 the astochastic Gaugetinic Marcon to an tampic communication with https/peter Marcon to an tampic communication with https/peter Marcon Marcon kuit is activitied and the Petertonic Marcon kuit is activitied with the Petertonic miguites into space were predicted with anothe the producted were so elimite that afreque and catals both the towen correctly the product and the cores in metalgies in the another the producted were so elimite that afreque and catals both the towen correctly miguites amount Alexan and the cores in metalgies in the product the three three theory has not four the plan ones in three. The plane were to four

All the ond of an implicit the hopes of the two lialitans were realized which said, "Eight plus seven a fourteen. Celes portfoliout that this was not quide right but the achievement captured the world a machation newsrthales.

The popular author Jules Werne, in callaboration with the Gorman Hermann Oberth immediately began to draw plans for a cosmobile in which to virial the Martens. The tack proved deficult, and more them has detecting passed backets the designate wave mody to last them first commovende. Because of lechnical diffusions, that along early be made to mach Martial the more and lake photographs, then return to tain's lown as the incost exclution catry only one passenger who must weld control who hashed because.

Band Essentives: the sort of the discourent of the detor (in evolutioned is goand to add memorand Blow-field works) who has been back large in a streastage according in the back large in a streastage according to the magnet was Water Operant agoogning the sort of the sort of the sort of the medical stream in the site as perfectly formed the leads who accord with the terse include at large of whole of the course includes at large of the sort of the course includes at large of the sort of the course in the site share accord in the voage is alloged in the sort of the sort of the sources and the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sort of the sources are sort of the sort of the sort of the sort of the sources and the sort of the sort of the sort of the sort of the sources are sort of the sort of the

The flight box place on April 21 1056, the space which was many to a height of the space which was many to a height of any to the space which was many to the april of pits Picasal brother: then it was under the any table space broken the discretion of the month space broken the discretion of the month space broken discretion of the month space broken the which any the standard to call place and to paced around the month which he discretion of the space broken the state of the space broken the space broken the which to the provide discrete a call place and the space broken the space broken the space to the space broken the space broken the space height in the space broken the space the space broken the space broken the space height in the space broken the space height is the space height of the s

This tragedy put a damper on space or plovation and, since to further messages were received from the Martians, the whole entirprise was forgetten.

Public opinion, anyhow was turring against such dangerous pursuits. The international combustion engine. For example, which that anyyou'd a bind' logue, carly in the century was everywhere replaced by sake quark electric trains and interurban trolkyor. The Safety Pitce instated in 1944 by Count Athen Nobel was executed every year to such inventors an re-selp store soles and influsible particions.

In 1939 a consorbian mesode by Jubn Proceedings and Jubn / Morgan Costneore top hundred teering for the first and entering of the second teering for the first all costs are top hundred teering for the first all costs are top hundred teering for a second term in the device of the second term of the term of the presence of the second term of the term of the second term of the second term of the term of the term of the second term of the term of the term of the second term of the term of the second term of the term of the term of the and more tarts of the second term of the term of term of the term of the term of term of the term of term The engines and other produces of politbon were structly banned in the writer the acticiture was kept at a confortable temporators by electrical heatens and by the calores generated by the stands three hundred thousand impoltants. Thus, win ter or summer, Manhatantee could atrid the coverners in perfect conflort.

In iterative and the arts, unwholectory introvation via localised by the taste of the survey of the search of the search of the the same search of the search of the search of same of the search of the Linkan Research of the search Search of the search of

Amanin East Grange, New Jarsey found a painting by Paul Okzame in his grandmother's able, twas obviously old, and he look it to a dealer, who informed him regret. July that it was worthless

Centuries passed in 2250 I was discovered that the population was declaring but the work tock lies noise a think although in mourned the increasingly frequent deaths adjurted mes and worken. The elikit and the backnipphage although one kapt popple from aging and the other made them im multe to disease, could not protect them against tatal alments such as cancer heart failure and hardening of the artenics or abalint potent fee and other societiens.

By 2380, when the decline became alerming, it was too late. Be youngest living worten, although they were at young as intecton in appearance had a chronologcal age of more than two hundred, and they was no increase ferthe

Droby on: the emains inhumble places of the work were abandoned and their former outsmuttlewar inholding pasted domed rates. Eventually even thread became depopulased. Prorets again covered the continents a elitable (b) work of the music for the final share in two thousand years allow were been in these trades and thereads all the threa were only see human beings left on the surface of the planet.

One of these mass donc transmerse was was then integrin a via overcleder Lake Lucence where the tast opecided at the intermatic to proceed in the Lucerna and Zunch internes. The other was a Lupeace wears. Mich it images who at the three wears. Mich it images who at the three wears. Mich it images are also at the remover and the second or processor did. The two commenciated by dischard and other wity well be cause of anise they generationed that Second and Load in Tabalay arreaded the Second Japan and to also the second second and Load in Tabalay arreaded the Second Larged by the programmer and the Second Larged by the second second second and Larged by the second second second and Larged by the second s



plansh her stocks of dhed food. The Imp took eleven years

We are a periodical moment where at lead we appeared on Gord's dicardial. Netther had soon another human face, exceed in photographs and dime, for mers a centary Gent played ha secold for hat and showed her has collection of autographs of famous muscums the took her on a weiking toor second the lease and them they had a pome in the country levels aver day and Mechi look of the rives. Speaking in German, ther only common language ahe add Seconders do you ner me?

Takes you see most in seed tends how one was you see miting and to possible in hum he removed he clothing and the see attrough the individed in mombanility centuries, he body was still that of a techniq yand its how clother back on her here day that of they locked at bacyle and stando for home. The time she was not inter hard, and the locked the way has a status of for home. The time was a home was an inter-

After her return they contribuid to communicate by shortwave radio on their birthdays for some years. In 2510 Michalold him that she was about to pay a wait to Buivante that was her last measure.

A tew years later Gerd put a two protection possessaria ma handbatt and made his way into the incountains of Unterwalden where he loads a herd of Hazer Musttein graam a hardy and affectionate bered When he discounted hat the goods liked his poople graying he built intuit on the moustmust and handbatt and an the amelhistercompression which here a small histercompression which here and a first histercompression which here a first a well also the postes during for an first in.

It was here, one morring in the spring of 2501, that the Arctanisme found him. The Arctanism had received Marcon is signals mended for Mars, and they had also neowned radio instrimisations of vocus singing Yoa 3in Shos My Baby, stock market reports and Armas 7: Andy

Three of the Archivers disembarked from the landing vehicle and approached Gerd who was string beneficies the full and was rearing politisms. The Archivers were large gray wome, or more propely, millipoids. They work owner over the eyes to polised them toor the glace of our sun and loxing like budg-yeld mostels.

During their long voyage they had had pierry of time to learn Borth languages from racio and belevation broadcatas. but they don't know which one Gord spoke gill bitsed elubros? They asked him Are you the last? Else-voca it demini?"

Gerd looked at them and played the opening bacs of the Fartasia for Unaccompanied Piccolo by Deems Textor

We come from another world. They told frim in Hindi Swedish, and Italian Bord wont on playing

"Do you want to come with us? Donité vij rse neve? Wollen See gehen reit uns?"

Gerdiowered the piccolo Nein danke" Glock auf said the Arctunans politely and they well away foreer DO



BY FREDERICK C. DURANT III

The distanties ingo ensated by Lick Break has become widey labors in the Used State and Europe The perings batters from service of incommissions which in which has the state batter of the operation of Perings these backgoons in the the starts of the state service of Perings these backgoons to the state service in state of the state back has been and required to the statescope of all ther the states cancer, and approximation of the statescope of all there is the states approximation and the statescope of all there is the states approximation of the statescope of all there is the states approximation of the statescope of all there is the states approximation of the statescope of all there is there is there is the statescope of

















 I was fascinated by the thought that I was creating not a fancilit landscape but one that really exists. I became obsessed with the desire to make each fandscape I painted of the moon as accurate as possible ? sough a merine the vision of the distribution of the gaining and find the one register to the share that distributions and the instantic for the share the share the share the distribution of the share the share the share the share the share the Distribution of the share the share the share the share the share the distribution of the share the pheric distribution of the share the share the share the share the share the pheric distribution of the share the share the share the share the share the share the share. At the share the share. At the share the







cage is both orient. By cause or the case of atternet at j for the years the the both orient in those in those of the particular beaution using year. Hereda domains a both orient and the particular beaution using year. Hereda domains a both orient and the particular beaution of the pa

Posek believes one of the man reasons why he loves space art is that has a comarks addient. Since in the last hall of the twentieth certary the romants alowly vanishing from the earth, I go on punnys to the planets." DO I would rather the onlocker be allocted by the painting and find his own reasons than that I try to guide his reaction I believe that any painting, after al, is a private matter, even if it's hanging in a galent?



A French astronomer challeoges Betty Hill's star map. revealing the most elaborate UEO hoax ever 9

AUTIXMATTER

While driving home through the White bet 20 1961 Betty and Barney Hill say # ing overhead Bar-



kee world orbiting a

UFD UPDATE

wars arrow the interrupted purrey" the most holy de- I stars (paned stars revolving around each other) because my of a star map on the alien ship. Complete with routes logical that after eaven years of investigation not even

While she was under hypness. Betty Hill Sist spoleg of

planets near such stars cannot support human Irla. Finally land were the stars Zeta 1 Raticu) and Zeta 2 Relicult

French astronomer Daniel Bonnesu, who used apackle this would alter the metching patients. Even astronomer/

LASERS VS. BALDNESS?

tone purveyors or belong ourse, come across some recent Chinese research, the next useless thing applied to bait spots may be the laser baits

According to the Chreteer Impraged East Jonal Imprage Last Jonal Imprage Last Jonal Imprate Stand Intern New Sealar of Last New Sealar of Last New Sealar of Last New Sealar Standard International Imposed one area on each armania each an infraed Last Imposed one area on each armania each and Imposed armania each annot a sealanchhear 20 dags Bar Salar Salar International Imposed Imposed International Imposed Imprate Imposed Imposed Imposed Imposed Imposed Imprate Imposed Im

Whill works on guinas pigs with normal hair however wont necessarily work on met whose hair has An aggreed public does not down the fee here between good source and bad technology. Nou and I know that Frankesstein was the doctor and the monster that it would be well a somember that the paciple of the village sugreed by the monther marched against the doctor.

- Lyndon Johnson

TRANSSEXUAL

A private transition has awarded a three-year, \$450 000 gran to a Van Nays California group named the Apha Garma Project to study possible hina between nencametion and transsexualism

Lodins a transsexual and a



former Roman Catholic prisis, who divices this projoct, is studying 450 transsecual men and women to try to determine whether reincarnational impairting timute to altert-cercuit current life-inyles for some people."

After a personal experience that suggested to her such a his might exist. Dr Ledens said 11 decided that if I ever got a chance to pur subst. I would I got the opportunity through this gram.

Ison many the year of the publicity Ladine and Every time something eppairs I spend three months shoring up the dike before I can get back to assearch Some people don't like what with down.

Not Locins does believe the study regit help explain why cersion propie have tooble adjusting to their gender and why hey undergo sixe-change openaloom — Alan Maurer

GLOBAL CRYPTOZOOLOGY

In an effort to make the mit ternational quest for strange ammals more scientific, and less mythic, scientests from around the world have banded together to form what is officially known as the international Society of Cryptocoology.

Founded largely through the anthusiasmot Roy Mocha duriversity of Chicago backhemiat and backgait, the society is the first incometional exemitite effort to contem the evality of animals once thought to be purely inghicial. We reliciting for real animals, not monitoris - except in the minds of the gonent public, registing Mackal, who is the sociarly's vice-president and treasurer These may be species that



have persisted unchanged or they may even be new snames, "he save

The pociety has test is preadent betread Heuvermans, the Ferch researcher who peneered cryptaczology and has on its board of directors prominent anthropologistis polivortologistis and znologias tom all over the world.

The organization will evaluate evaluate evaluate everything from the classic cryptozoriogital juzzfee, such as the Loch Hassimmister to the mokeler meente a discounties ceruiture Macdeal is now searching for in contral Knoa

Attricuigh sar up for biofogists, the society is open to stryone. For more information, write Professor J. Richard Greenwell, c/o And Lands Committee. University of Arizena, Tucson AZ 85/21. – Douglas Colligan.

"Don't blie my inger Look where it's porning - Watern McCulloch

AUTIMMATTER

ROBOT EVOLUTION

Barry up where Cherles Dawn is that is accritical at Campa Melioni Ribbaca Campa Melioni Ribbaca Institute has linked be future of humme webyton to obbac years according to Hans Merzeno, campatone will be mere stalligent than hum mere stalligent than hum mere stalligent han hum mere stalligent han hum mere stalligent han hum hum to be powerfur note hum to be powerfur note

At inst. Moraved says, people will learning easit replease of their brain patterns. to computer programs. Processaid by speatry computairs the programs will enable people to think thousands of hence feature than before.

The next evolutionary letap. Moraveo says, will occur when superiuman tools give up there doern for individuality and begin to share programs. If for outputs a writer wanted to back a cabrier, he or she could save time by borrowing the memory of a casperter And handade of stacrosps with access to minde se brillant as finsteins, would spend their days lathornice the unverses.

As people rested and detask merchan likely, Morevos tays the concept of self will be burned Notaveo environs the difmeth merget to dif burnes barns with the burne of data torns of the both cost by and enhancemental barns with the burne of able together burnes and barns and the burnes that any and enhancemental barns and the burnes and barns and the burnes whome methods is stored for vome — Manuette Cotive





FEMINIST HEX

The "breakeds keller" of Mann Oconty in California may have been caught harket to a hex patterned by the Susan 8. Anthony which owen, at least accord ing to Zeuzenne Budtpest, the group's high priestees.

Budapeet and fast the lemnal cover counsol the lemnal cover counsol the infer who attacked women in the widdenness, four months balaxet the capture of suspect largering for a place to commune with nature. Not were looking for a place to commune with nature. Budapeet explained ford paceta not to well widness of inght. So, under a fail movieuse traditions placed a pater.

These are not the first time a worknow here brought a worknowney brought and Budepast and Several years ago a group of us travel a worknew here in gathorough near histor tuit of algebras start outsout the man who weat known for he man shown for he man sh



gloamed in the sun. Threen days inter he attacked three women, who then turned on him, best him up and look him to the police."

-- Aksri Maunor

The linen is a sea monster with the body of a cash and he basid of a cartified sublic accountant

AUTISMATTER

MAGNETIC PEOPLE?

It's common involvedge that bards bees and even lowly backins are guided by a magnetic sense. But now some scientitis are claiming (to the amegunce of their colleagues) that people too can rowgate with the help of macmetic perceptions.

The debate over whether aramal magnetism is present in humans began a year son, when Linemesty of



Manchester zoologiel R Room Borer bendtrided some of her students porsed frietrieben estimation and the students rest sent the students how the students bendtring how the Bakersteinster ind asked the students to indicate the student to indicate t

The explanation, according to Baker was their maginatic terth sanate A fixer months later however serwell American researchers third to reproduce Baker s results but failed.

Now Baker claims that his latest work, leaves no doubt about the presence of a magnetic sense in human benos Disclosing his resuits to Critic before ad detexing an immittantal oymposum in Italy Beker sard that the American attimpts aver and cristally talkturps inscend, the oppendit the experimental may have been styried by lists than perfect conditions, contexing imgeretic stams, the wordg thre id day, and low magnetic gradients inside the bases

To mmmaze these effects Belier and his collaboratory ampo Muther constructed inter in a pleasally condructed wooden hut Blindrided and earnutiled and densilike the one sheer at left were sector and on chairs in the motion of a dark room tamed around and then spixed to indicate there druction. After dataring accutate answers from about 155 of his subjects. Bakers comficient that he has packed his burnothesis.

Whether this latest research will common the Americans remains to be seen. One has already called some of the data: a liste bit furme!

Cards A Johnsann

There are no nales of architecture for a castle in the clouds '

–G K Checkerton

PSYCHIC BETTER BUSINESS BUREAU

The Association of Psychic Practitioners, in San Jose California wants to bacome the "Better Busiress Bureau" of the psychic profession.

According to Mary Palerino president of the association, many so called psychics and fortunetellors lack integrity. They may make a client three they can change his life, she says We have no evidence that that is consider

There are some in this area for instance, who calm that by burning cancles, they can bring a lover to you. And the canceles come high as much as fischlandred collars. I don't like being burched with the lass of of

PLACEBO HOROSCOPES

Prinditacopies mainteners been propared for a specific person more accurate than placable transcription in tended for someone also? Absolutify not pays Dougles P Lackey a philosophy prolessor at Sanuch College in New Yesk Oty

Lackey used an setrology manual to prepare hole scopes for 38 students



people who burn cardies -The associations working with psychologistic bueness consultants, and reputable psychologistic bueness consultants is not reputable psychosis who psychologistic bublet cardies for onthing psychics who psychologistic at in an ethical transmer halomenusgopata that anyone consultant another should be skeptical. An indices interface as a course about what the will ge a clean describes how a same sometige and cleant float genetics - Alace Naure Then he given each is copy of his or hier cen horoscope as well as another cene selected at another. Lackey sed students fail that ther own horoscope and the placebor were mono relasa equal in accessory. Natebor wood for their own eighteen twoed the placebo and even still the two deed even

- Kendlock Praziet

It is absurd to deny the role of fentasy in even the strictett science."

Vlackmar Aich Lonni

MANEXPLORES

CONTRAIND FROM PAULINE

normenta to our Michnelogy, Ihough nol necessarily to organic life. Certainly a complete viscuum is beingin as compared with Antarctoca or the oceanic abyes, where we have already been

There are some not-servicing and/or solution of the solution of the solution of destroys the venciler and the solution of the destroys the venciler and the solution of the constraints of the solution of the notestrate. But solution to the solution the notestrate, and solution of the solution the notestrate, and solution of the solution the notestrate, and solution of the solution the notestrate, and solution the solution that are and vencilar that have listed the the solution of the solution of the solution that are and vencilar that have listed the parameter that we can paper in a sparser that we can imagine to solution the solution of the solution of the solution of the solution of the solution the solution of

I feel sun that there will be many further proofs of this statement as we continue sending out our expectitions into space and so other planets

Whother we find life or not we will discover things that we could never have imagened And these will provide maternal for the deeper and noher fantasies of the Auan just as the earlier observations inspired the landsies of the great.

RAY BRADBURY

By Bradbury with considerable justice, here been called the heart and soul of acence factor. He area spice explanation re an expression of marts rebellion against his own manpily.

The universe is full of matter and force. We in all that force—among all the builts and gravityBas, the sam of casimic just the bombendments of energy—how little sphilt How small are there decamal points of intellogated!

Durb sometimes—yes Awful, guita offan Drawflui spart brutes on occasion following occasion That is how we trings that represent infolgence seem to ourselves, and guite offen trak am

Addyset leads for size our certain blows out in the work lines small how the dengift of the handed on impraemanty cut of minor starts leads of the starts and the Croseng the widelences certains agait again find caurad in covered ower, herms the coole of the previous right a line to start here in the circle and the start of the start of advant the universal widelences and the advant the universal widelences and these and these on the content of the start of the advant the universal widelences and these and these on the content.

The abound thing is we do get so bury with facts with looking at phonographic plates with calm theories and with everyday life that we forget the majoring behand imploration.

I was reminded of this one morning recently when I got out of bed and suddenly thought. Why sweet Josus what's the use 1% crews of holing at Mars throughs telescope, and harg or panels, wriding books, it is not to paravate not just the prevent of matching bot material surving loward. Book and in hotens, we etto born to kee, and kee matching whether coefficient and would anotato at in exists a hard and one more above pur land. It is also are more above pur land to be port as we more above pur land to be port as we more more sould down us to here:

One of the sease hell Dr Koett Encode search and Aurong an attendentia conseration in Sen Dego concerned statil with man utiling said nock on Mean wern as More struck boulders and states to buy such anticial volcances supplies bactered such anticial volcances supplies bactered have the search book of a book to buy bas the state of the search of the contense cherecked looked in a book the conbe broathed as oxygen or drunk as combinations made water

A staric experiment, to say the least. But man, with bluggtint, and Vulcan's blow-

Ein war-torn Biafra, a stralling plane dived down on us one afternoon, and we plunged facedown in the mud Then word carne that men had set foot on the moon For a few hours the war was forcotten ?

forch can mouth to mouth breathe Mars into new kestlence

Are welf-banken grad grad, good tag, hennes destruise of them an intermentality? Hard's Bid was wend valars. We are poor segars in the long heart of the weiges weight or crambo on cold street context weights and the long heart of the segars weights of the long heart of the segars draw mobile of motality? No We are classificated to balance these sequences handhed of back billed of they, consider of thereights and they are balance. And there are balance to the sequences handhed of back billing of the sequences handhed of back billing of the sequences.

Forthe disam of marken they been to kill deith someday We have withan of it in our states, newly songs poots. We exho thom and cry out to be Resper. Boward of our noticet which will shattar your scythe and acating the bits to the stars.

Many thousands of years from the day how will we name this time we lead an? Endea IP General Revisited?

Ecclosiates Redacovered might be a befor appeliation. If to all things there are seasons, times to come and gs, kee and dia, then survey ours is the Time of Going Away is very special long season of knowing and doing

PHILIP MORRISON

Philip Monson is Institute Professor and prakation of physics in Massenhueets Institute of Technology. His contributions in entrophysics include physical descoperus of such cellisikal phenomena as supprmene cosmic X ays, and quasare but hars he writes of more humble, earthly those sentible.

If you should also, Why do havano berigo explore? Nexuld answers all these the Greeks would have answered. "Bocausi is so an anter "Nex I am answered," Bocausi is the maske of the lattice term furnes attribute is self-explanation. It covers avery attribute of sur species the most diverse through the lattice term furnes through the set is the attribute through publication is that precise the reversitiends of Los Arreses.

Internet and the second sec

I was struck by the work reported by some Franchersmologistan indust Alexas who studed the work of certain spacies of large lemitles. Townies of course are socal armais of concelenable power and provers. The structures they build are large and enduring architecture. If sign 20 soft high on towne occasions: They do the landscape. Ike so many termite skystrapers.

Layer upon layer hidden within this semany which rises out of the ground, are the arches, carved arches that resport the next floor and then more arches for the next and so on secretly like the oxysts of a building somewhere in table

No great architect has designed where the luminal archites will be No one has obtained that No exist lass. Subject on provide the second second second second second provide the second second second second provide the second second second second metal model within any terms for how any get the arch hash, but metre the mature any get the arch hash, but metre the mature metal second second second second second second second metal second second second second second metal second second second second second second metal second second second second second second metal second second second metal second second second metal second second metal second second metal second metal second metal second metal second metal second metal metal

There is never an arch present until one appears by chancel whereas when we build arches or anything else, the arch is in some some present before it ever easts that is what it meen to an other at ever The need to complete that internal model-lo estend and M en its frances-es. I there, what we mean by exploration

plete the internal models is centernly espressed differently in different outpress went to Switzerland found wilegers who waters named the idea that it might be whaters these were a few young men who mosts it was needed somehow to cam

I believe those cultures that memory to show some public concern for filling in the

For me humans explore because time after time when we wish to adapt to the

NORMAN COLISINS

Former addor of Saturday Provey made University of California's School of Medi-County suggests that by antoncing the

The cusston Why explore? pertains to phenomenon of a journey to the planets as the observation of intelligence. The fact

come out of our view of Ms. out of our comcept of history out of our understanding of rsily, we look to our traditions and our philosophy as we expand the human pre-

Some historians see history as an accurrelation of error But history is also the reach. Not all problems are old problems. the question Why explore?." it becomes 138 DMM

receasing to mire to the obscionance of human progress. I have a theory that propnees is what is left over after one ments an

The reason is a safer to travel in a Boeing succest is that the man difficult and comspoked more fruiduly far beyond the un-

found if possible to walk erect on the moon

that first lunar vovicer was not first man or the earth. He was able for the first time to and exquisite combination to make the

The effect is philosophical. To be able to aon in outer spiece. to see the relationship able to contemplate the gift of the unencumbered by prosmity, to be able to needtate or journeying through an efforty of galaxies to be able to dwol on the enthe unwroo- all this enterois, the human that technology is subordinate to human illingitation. We are going into space on

So long as human beings do not per suade themselves that they are creatured sense that they can be unafted of they dread but with great expectations DC



CONTINUED FROM PHOE 59

har She was actually a year of he younger than he was but he hought of her as much, much older. "And mund you come right straight back here abler work too. Tonghts the big Fourthday dense and you we got to help in the kitchen, hear? Jame, are you loaveral to me?...

He ducked his head and said "file"m his feet sheady fidoeting to be gone

Was Hamlin gave him a little push saying. Snoo row² and then her gritt face softening adding. Try to be a good boy He scooled across the verantia and cut into the raw, hot brightness of the morning

He startified along head down aft in sociaring hear smeares the Bargenship actions by hear up on the Bargenship actions by hear up on the Bargenship actions of hearbard in a social heather actions of hearbard in a social heather and to pass with the Control of the special barder or some bargenship and the special with the Control of the special part of the special heather and the special with the control of the special heather and the special heather and the special heather special heather and the special heather the special special for sphere heather the dust special for sphere heather and the heather and the heather and the special heather and the special heather the heath special heather the special heather the special heather and special heather



The party stirs with

bears and critzlies were back in the moun-"" four or five years there had been wokes again, coming back from who knew hardened Waters down from Jackman Station in Manye betacht a slory that a bees any pumes left closer than Colorado or Britsh Columbia. It had taken only

There was a strange wapon in front of the es of a dozen different colors - deep roatil bue, yind velow scafet, purple, earthbrown light forest-green black burnt orange-as if a hundred children from bester old buildings the streaks of color in more years than he could remember the wegon's traces - and which now rolled side bright greet on the other with prance

Jame goggled at all this wondering if it could possibly be real or firtway one of the inc particularly bed spells." After a moal-he adered ha sherion enough to then undemeats that came a long let of nords each word partied in a offerert

NHE LOCED AND NO. COLUMN DIST.



ers' station opened and Mr Stover came barreely down the stars. What re you doing here Jame?' he saked. What're

words to describe the wonderful new waghe said at last. Just coing to sweep up at

Mr Stever glanced nervously back up at the door of the Outsciers' station. Incered day Jame Never mind about the store to

But- Jame said bewildered. Butsweep up every day

Not today. Mr Stover east sharply "thu go on home you hear me? Go on get

Mrs Hamin's going to be awky mad

You tell Edita I said for you to go home " And you stay inside too Jamie You star

Jame rodded his head in acceptance of was run rito you the hell-wit, the crazy barrass Mrs. Hamin and all his friends

Crazy Jame

The sun beat down on the back of his

At the corner balted in the shadow cast by the big cek at the edge of the school-

talking as they went There was Mr Jamethe middle of them, taking an maledly and wathe his arms, the visitor, the strangunruly blond har that shore like beater

Watching him, the waster -- new clangers a hand on Mr Gall's shoulder Mr Gall sharriong away-Jamo fet a chill that un-

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reaching and immationed live of sixingets of everythingtion based in forthcore's name boundaries, that had affected him ever trace he could ensemble, and subcardy has delight in the weedenful wagon was transhot distinited, because he reaked that it, no motioenterionautice. He haaded homes waiking into test or row as if shared slong by some of cold word that data quies reach the public walk would word that data quies reach the public walk would word that data quies reach the public walk would and other data quies reach the public walk would and the data quies reach the public walk would here the quies reach the public walk would and the data quies reach the public walk would and the data quies reach the public walk would and the data quies reach the public walk would and the data the state the public walk would be a the test of test of the test of the test of test of

That right was the Fourthday feathhidepartured bay, issue of the cid frike still calcid-a-and/or Jame, whowaholp, ing in heikfore is seal the early port of the owing was a bin of work as two powerder to program the most jour luxiky ham, weld pagen thou, bailed mostow sweld pollation, com pair mores theny pough homemade literad. blackbennes burns and a care mather three.

That was all as usual, the executed and acceptor that Wate was not usual — and what the doll not expect—wash that the wards not be all words on any think was not using and united by Nove James mine goo day how all was usered instead. Those so of a list auf of himme he alchen any our hot how you go all good to these the your that the day gou got to all in the kinhen and helps out of tagk. Now don't you mind hothy if they sourgeaplate wince just the ame daility word and winch the tage.

And then, after a few moments of sorter what on barrassoci builting she was gone

Jame sat alone in the empty lass

His paix was filed to overflowing with food and he d over been given a glass of dandelon wine a rare treat, but somehow he wasn't hungry anythore

He set listening to the wind tug at the old house, creating the reflects making the wood graan. When the wind divid the could hear themtaiking out there in the big drining room, the works just loo faint for thim to make out the works.

An unternative angle roogan to reach the Coary Lamin he read along the socie sounding file, and duit to har own was it where he sun had almost set in a welfer of using purple clouds. Suddeny the alianed out at the glass of wen, seeding it spinning to the float Laws 1 such the set must be to be allowed and the set of the systemet like ansught oblight Seen Limit he spin of the weat.

Somehow he found himself on his fast He desmined to eat with the others didn't his? He was as good as anybody else, wasni he? in fact -- in fact --

The comdor He seemed to fical slong it inspire of his standbing, heater faint. The vorces got loade, and year at the point when they isobectute words he stapped standing unrolled in the shades behind the disnip room achieve hangs and here and a outrous, empty versitio.

Sconer of later you'll find that you have to incorporate with the Confederacy' Mr Brodey the stranger was saving. The other faces around the big dring from table were cool and reserved. The kind of nonwilligs bartin economy you've got up here sat cash thid up forware you arow even though it's really a kind of communal accesser-

Are you say in white community up hear if Mr Samario said, outlaged but befrom Broday cauld raphy (if he inherited to), arms strode to the table, palled out an empty chain—his own inditual said—and and down All laces tameet to him. startled, and conversation stopped

were closing down on him again, his vision was awarming and he began to lose buch with his book, as if his mind were forther slowly up and away from it, tike a balloon held by the throng sort of letter Sweet sicing shifting confusion be based Mre Harrin start to say "Jame" | thought | told you-" at the same time that Mr Aphley was was amino in tolycant condescending amusement and something about Brodays this contemptuous strife something about the orde of starting faces, pomething wranched words up out of Jamie, sending harled the territor words out at the pairs before ratting their teeth with them shakwere the old strong words the right words. and he heard his voice 14 with non. He words to speak, and then he stopped

A doubly tranship failer over the toom the Brody was string at time and Jame sawite tace run through a gato genuit of approximations from entation to stantified approximation to dewring astronomers. And the generation went safets, and he generation the entation of guilt as the had been purched in the storesch-and the color went welfty out of the face. My GodT he said: "On w God!"

"STUNNING!" "MARVELOUS!" "A LANDMARK!" "FANTASTIC!" "DAZZLING!" "A BREAKTHROUGH!" "BEST THING ON TELEVISION!" "GOSH!"



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The silence west on a moment looses buzzing nauses and unwellity he heard know you didn't moan any herm. Go on upstars now Jame Go on Her voce

stars all the inchoate demons of memory

bich treaty a him solt of?

Contolargames with me Brodoysad harshly Two seen the old pictures. The hat we be saily use -

- the President of the United States

My Godt Think of a The very last Prop-

The uncumbent President * Mrs. Herrico.

They stared at each other through the

And tis recaturprise to you either dir?

traty new reading to the phrase deput his mouth closed it and began turning red

calmly reminiscently. Perhaps two monites he waked all the way up here from whats most come shock. I guess and exposure and mate like something you might selate at night And kle's been kke a half

"Watch your mouth aon You're speaking about the President.

After a smothering moment of silence Mrs. Hamin and midly That's your com-

"How can you deriv it? The One Life Ultimatum? The proventietion stokes on

That's cran, and you know if " Brodes it down in Mohawk: they made damn gute utilit for olden sust a borthaute back

main She seemed to grow smaller and older more withered and oneried 1 don't know son' she said week's after a heavy *

How can you say that? Brodey woed at his face-he was sweating profusely and lascfano away some of the anger." How care you is that that man him-hos can

Old Doc Notion rest his soul, spent months was or wasn't he's just like a little child now-a seck old inchiered child who ing to him most of the time. Mr Brodev you cant hate a little child for something he

Brodev sourt around as though to stalk.

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If some of the zip his goine out of your picture taking, zip down to your Soligor disaler and try our 80-200mm on your Soligor disaler and try our 80-200mm on your Sonon, Minottu, Pentax, Oxympus, Nasin or other fine camera Ox write for hull information

shoused. His hole were deriched new and the maschair his nock were conted. At the very least, he should be dead Billions , of lives on bast main's tandal Billions And you, sop apopting you not only leit him heyou make ecoarses for him For her? He shopped groups for works to operate the control of his outrage. The live making of the making ecoarse for the David hermal IT.

Min tensor altroy are care to have a the sense of the sense that the sense there in the menerative assessing the sound more right wave built as the sense that the right wave built as the sense that the sense of the sense the sense that the sense of the sense the sense that the gauge yapacity and the sense that the sense sense that the sense that the sense sense that the sense the sense that the sense that the sense the sense that the sense the sense that the sense neor old man stitute in them

Bessing maginatic control of monoth His gas watch check do and the market monoth my metch head on a line and his hards that gas and a check do and the land his hards that gas and control and the line here here more does more a smoothering managaalish lands and and the line here here more does more a smoothering managaalish lands and and the line here here more conversationally on point here and conversationally on point here and conversationally on control the land loss requires and own the years is be come guite a line control to the market allows for the lands of the lands of the loss requires and own the years is be come guite a line control to the market allows. The lands of the lands of the lands allows here and the lands of the lands of the loss requires and own the years is be come guite a line or lands of the lands allows. When the lands of th

April, Mis Hanh each oaily joudina dort yao? Mas Hantis Hose Are Hose dort yao? Mas Hantis Hose Are Hose and Are and Are and Are and Arena Are and Are and and Are and Are and Are and and Are and Are and Are and and Ar meter? This has a the United Samo of America, and table port bot in the there—why has the Preserve of the United State of State of the United State of the United State of the United State of the United State of United State of the United State of State of State of the United State of State of

AIC Photo, Inc. Caste Place, N.Y. 11514

A process material and a process and a process and bow and spoke with Salts woore. Edma? Brodey turned his head to gibrice iff. Seth. When he turned back to tack Mrs. Hamin there was a out in her hand in Sile.

old-fashoned revolver that looked too huge for the small blas-warsad hand that held it. You can't be serious." Brodoy wite

pered . We need any being Edina?" the sharing

No frank you, Salh The barrel of the

revolver was its unwavering its her gaze. There's some things a person's got to do for herself

Then she cocked the hammer back

The Preudent of the United States didn't notice the shot Alone in the small upstane bothoom, he availed the eyes of the tail netred reflection in the misor and compusively waited his hands DQ



What will we do fornerrow? she asked maly

So they became lowers for the first few disp they did this but ear and swin and embrace and becau the moxicolog fault of the device the the cased of lear as the had at the beginning. That she would dusagreers as subcelling as she had come to them her faced of quasitoper subsidied. After a time, but evens her chose on to have his turn, preferring to leave her mystenes upbenedid

The could not provide the could be a Warring the the state bar down as Warring the the state bar down as Warring the the state bar down as Warring the lenge that be the state of the state of the lenge state barries of the state barries of the barr strips or treates in the could be the state of the state barries of the the state of the state barries of the the state of the state barries of the state barries of the state and even so, he suspected her

Anyone and part of events have a conservation of the server of the serve

It was almost as absord to believe that she was a Motamorph as to balleve that she was not

To put these matters from his mind, he resolved to take up his art again. On an unuscally drain and authry day he led out with Same for the rock of the red succuterts carrying a raw carries. She welched becompted as the propended everything.

You do the painting entirely with your mind?" she asked

Enersity I to the science in my soul. I transform and learninge and heighten and then-you'l see

Is it all right if I watch? I won't sport it? Of course not

But it someone else's mind gets into the parking --

It can in happen The canvases are upper to me. It is approximately and the mass and that the final pairs days and the hands were calvered. To enarry years are not that but done that. Would he sat have the grift widd the technical line and grift widd the technical line and grift widd the technical line and within mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one within a mind. The scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes in the scenes was a good one of the scenes was

He closed his eyes His entered tratice He hurled the picture to the cenves

Same utered a small successed on

Nomie feit sweat break out all over so staggered and fought for breath after a moment he regarded control and looked lowerd the carvas in front of twitt

Fize bestated? Serve manmand

But he max shaken by what he saw Nomine, it was a dark and anouished paint

"Fven so, how wonderful to make the And such a lovely thing

He stared at her 7hs? Lovelv? Was she penting this aprober and align work-

You don't like it she said. Not a cuee-

Maybe I need to go about it slowly to get the war of it notif span-

I told you that the centralies are funded to atisct the panting

No. Sanse This one is spiendid The more I look at f, the more pleased I arm

plied it. But what she had said affected to doubt of it. Whet it she had managed soul radiating its essence into his spiritcoloning the empulses of his mind with an

They walked downstream in stence When they reached the meadow of the

He could not halt himself "fou aren't

She stared at him wide-eyed, od or rising

We a Meterroroh? She lauphed not very potynoincity. Whet a wid total

SOUND SO GOOD IT KEEPS THE BAD AWAY.

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anytime you want to be there. The Part of the Name & Day Darlow and Party Arrived By Str.

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You it be surplied at here lette a Calantian coste—in: for below searchert builg conventional telephoto instate that have note of the weathing of a Calentace.





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ander involution instituti

Please Answerme

"Nou want me to prove I m hurhen? How could I?"

I want you to tell me that you re human

or that you in something was

Can Librahman (bal/2)

I don't know. Can you? I ve given you your answer." Her eyes flashed with minh. Don til feel human? Don't I act human? Do

Pathops I m unable to tell the differ-

Why do you think I m a Metamorph?

Because only Metamorphs live in this jungle, be seed. It asams—logical Even though— He fatered. Look I ve had my answer II was a stupid question and I dike to dop the subject. All notif?

How strange you are! You must be an gry You do think I spolled your painting

theire a very noor kar Thenon.

All right Something spolled my paint ing Edon terow what It wasn't the painting

Part another one then

Twill Let me perti you Serred

T told you I defeit want to be exacted."

Loend to Loend to see what's in my own

Paint the division tree Therion Paint the

Wite not next you?

The idea makes me uncomfortable

128 CMM

You aren't grint g mo a real answer. While there about being painted that-

Phase Theros

Are you afraid I I see you on the carvia in a way that you won't like? Is that it? That

shee Logent you?"

Phone

Let me paert you

No

Laive the a teason then

I cent she said

Inten you can't refuse. He chow a canvias from his pack. Here in the meedow now Go on Sanse Stand beards the elevent II I take only a moment-

No Theron

Ryou love me Sarise you il lat me pan you

It was a clumpy bit of blackmail and a sharrest him to have altempted it. And a argened him for he saw a through pitter in her eyes that he had never seen there before. They contracted each other for a tonse moment.

Then she said in a cold that voice. Not here Thenon At the cabin ill let you paint me there if you meet

Nother of them spoke the rest of the way home

He was tempted to forget the whole thing. It seemed to here that he had impland his will by force that he had commit ted a sort of spic and he atmost vested he could retreat from the position he had wonisst there would rever be any going back to the old easy harmony between ithem, and his haid to have the answers he needed Uneasity he set about preparing a canves

Arrystere Bythe stream Bythe cabin

In a slouching stack-imbed way she moved loward the cabin. He nocked and disprisionly began the final steps before intering trace. Same glowered at him feats were welling in her syms.

Trave you, he cried abruptly and went down into trance and the last thing he saw before he crosed has speed was Sama altering has pose coming out of her moody slouch squamg her shoulders eyes couldenly bright similar backing

When he opened his eyes, the pairting was done and Sense was staring smithly at him from the cabin goor.

"How is it?" she asked

Came See for yoursel

She walked to his side. They examined the picture together and after a moment Namie stopped his arm around her should der She shrweed and moved closer tohim.

The painting showed a woman with human eyes and Meterroph mouth and nose against a jagged and chaotic background of clashing rods and oranges and perior.

she sizid quietty. Now do you know what you wanted to know?

Was it you in the meedow? And the two other ames?

Not .

Why

You interested me. Therion I wanted to know all about you. I had never seen anything like you.

I sall don't believe it the whispend She parted toward the parting. Be-

levels. Therion

NO ND

100 have your answer now

Tknow you retruinen The painting kes No Theson

Prove it for me. Change for me. Change now. He released her and slepped a short way back. "Do it. Change for me."

No he and Not that one No more counterlets

She became the Metamorph again

He noticed these That's before Stay to way it is more brailing i

Beautiful Thenon

I find you beautiful Like this As you

maily am Deception is always uply

cors very long and namow without those mails or visible joints. Her skill was alley and logener metaniess

I should go now, she said at last

Even now in your true form

Wery much, he said Will you stay?

She said. When ifsid came loyou it was together I asw there was no reason to hate you Not you you as a special individual

It was the voice of Sanse coverg from those alian lips. How strange! he thought

To make the game go on forever But the came had to end. And yet I shi want to be

- Only if you truly want me

Part me again. Thercon: Show me with a peating. Show me love on the canvas

the daskka tree, Sansa in the meadow Sanse at twilght green against purple matter They began to go on long voyages of exploration together, down one stream fowers and the organizes of the apple the toothy fizialis and the burrowing golden local sleeping away their days in muchakes. They and little to one monther the time for answering quastions was over and

to measure the passing of time. Perfusion month went by perhaps as. They encourkeeping they distance and she hoped they would increase them of your formation

One alternoon of steady druze he sent the cabin four Metamorphs enlarged He not tell which one "Wait!" he ched as three moved past here. He can after thom "What do you want with her? Let her go! Sarsa? Sanse? Who are they? What do they ward? "

were four Metamorphs again, gliding the mile paused at the edge of the clearing. the stream. He imagined he heard weep might have been any other sort of fusient Tick while mist

He never saw Same again, or any other be slast by them with their little poliched Sanse - if she was still alwe - but from the entire society of the Metamorph folk he demented his caper and becam the long

when he reached the borders of Castle to part again. He worked pity from memthe middle distance. It was not the sort of work lively to be popular on the cheerful

He was widely imitated though rever successfully and he was the subject of studies. Your peintings are so turbulent and strange one scholar said to him

I work only from memory isaid Nervele From prentyl memory I would be so bold

Not at all allowined Nismile All my work is intended to help me recathion a ataind nest the questioner min destant mists theck and not as anot that swetters by a langled network of sense CO

EARTH

especially useful for the manufacture of Resource Wac' the Rules are winning

To tighten their stranglabeld on the The Russians are staffing the mining faculses of Alrean unwesters. They also oco.

Or Els Mwanang onze director of Zam-"humanitarian" Dr. Mwanang oree who of Mining, welcomes Soviet anastance, to help us toht colonialism and sustain our away by American activities. The Rus-

eral supply is provided by the collaboration tals to replace strategic metals. Another called Bapad Solicitication Rate (RSR) steel containing childreum and able to

The National Advonautics and Space tenals Program (COSAV) laboratories at at Columbra stays cobolt to used in about

With the oplicial wild cand lurking somewhere in the dock reports like the ocularly chromium and manganese. Dur geater Soviet influence in those countries brone OC

NTERVIEW

CONTINUED FROM PACE 95.

Simplifiely you won't cookinsada your own skim According to our prefinancy studies if you had the metabolic new as a fully prove adult that you had eithen you were a book or three year-bit you would have a nottle birtperatanic d'raughty cen hundred ten degrees to one hundred. Biten dogrees watch there your brain would be conked

Omma How were you able to study this?

Derekta Wei, we look skilt ammet bur or free motifies out and reparate them with an estimation of the state of the state of the state statistics of the state of the state of the state statistics of the state of the state of the state state of the state of the state of the state state of the state of the state of the state state of the state of the state of the state state of the state of the

Own (IDEC) is the mechanism for pathobiproly aging the organism, do you belevel that the hile come about by accident or that the aging program issue is genet ically programmed by design?

Denekla Well salce Darwin we're not al lowed to use the term design Thet's a no-no-

Given An oxidationary program primetry Dentities the Tarry to postcol - and on the calculation of the constraints of the constraints and the constraints of the constraints of the chargest of the constraints of the constraints of the constraints of the block of the constraints makes and produce new and uncleat forms of bacterisa particle of the block of the constraints have to endow why apply all of a constraints of the constrai

Over improved later supply the results of periods (Li di agricultaria) and the supply the set way of the periods (Li di agricultaria) and the set of the improvement of the set of the set of the set of the improvement of the set of the set of the set of the set in the set of years, however, that sums one hundred years now gives them twenty generators to select those low keats bears in resch generation that can talerate eating more and them nonucapitas players. So by netified of the one hundred years, when the eccaliptis breach has whether at also are vector with be here and they il be able to make it.

Once is the difference between the turnover of generatorie the difference between sproces death and survey?

Bendle In a rapely changing, heals environnet us. These annuals that have surved tendtohave short Heighers have wird. Mervover they have predictable life spiritional strategies and the second strategies printing all of them. The is obsolvely a grinetic program, because cach spochas to for that specifies and his calcination, the secto for that specifies at this calcination, the secto for that specifies at this calcination, the la hear first and many offer parameters. Suppose benefit a change in the environtion. Theress Deviceshi an advantage in this Theorem Subcosty in advantage.

6.4 DECO inhibitor might be quite inexpensive — we in taiking about a smail protein chain of three or four amino acids. Our DECO blocker could be almost as chean as estimat

have a twelv high tarseer rate who as a devocriteria is changing rapidly. The greater the luminer rate paid century the greater the luminer rate paid century the greater the chancer of surveysite busite two luminary local. An annual that is turning one for on twelver these states per century than has competitione is obviously going to early on the set that the states and that benefit threads in their opportunities contacted with the set of the set of the obviously demonstration of the span.

Omer To the individual who's dying in two water and who wants to two longer that may be small compensation. The exolutionary program, you might say is nature s game reliate that the individual is come.

Denoids. The enough it is clear that in institute solution once the individual has processibled and allowed his progery to trach matarity as far as exolution is coowned he can be disperied with

deny Well if some times in history the average life expectancy has beenwhat-twenty twenty-five years? Are you stiping if would be belier for the species if that continued to be so? Denda Any keng hing- and is dog a diction on one coupyrup non-base only one way of adapting. It must device nondraft years accessibly locauler on charging-environment. Its value of adaptation has be accessible incert which potentially initial islands with the adaptation is conhalisticable the number of genes, the number of incessing genes. Its mume of adaptation is without blooding. The number of adaptational blooding. The number of adapitability blooding. The number of adaptation is included blooding. The number of adaptation is reached blooding.

Similar in the case of human bengan whether was statudied to at the ogn of teenty has or at seventy has our boffygenetic program deast i change, does if Bandhai in toereni change our boffy as atmake in the publication the transition that severy important—bockane the transit was our of information that on averall withnotif all control that on averall withnot large compared in the DNA. The total information has the survival ago until the information has the survival ago until the information.

Otex: Do you mean we can now interfere with natures pame?

Denotes Adjoint to With the meeting of intrariang, we begin to prime if receives intrariang, we begin to prime if receives performance and the set of end the set of the set of the set of end the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the set of the set of the set of the the set of the the set of the the set of the the set of the the set of the se

Offers to we are able to change some of the evolutionary rules as we begin to undemaind them is its intractive three that your tentative theory or part of it is that we do have within us an evolutionary genetic agring program to ensure the turnover of generations to ensure the turnover of generations to ensure that we age and ole—and that the mechanism for this is DECOP

Denotes Right Well not gate (4 au that elemente or planch have mechanisma to ensuite some meantable degree of turnover Plants are a special exest. I wont say much shoul them. A single tree may be how much shoul them. A single tree may be how much shoul them. A single tree may be how much should be a special exest. I work say the that more than two years of 0.4 here is will a scolary of angineses that here have occupy the starms backs but wash years before an exe device, and there have have back

In other words they're changing gamet-Ically The leaves on the north side of an old

Ontri Then the leaves are the true inde

Denckla That's too complicated Let's go opinion that there has been a both evelu-Say two things very carefully. We know the example, the Paperty salmon apparently des of a massive hypersecration of conoccurs in man. The mechanism by which brought about may be very different when you jump across big differences in speadvantage in rapid tumover already discusted many means have developed for many different animals to ensure the death have a high adaptive coefficient per canmais Dogs horses and the average barryard aramais all seem to die of the serve patients of darage that we de of like a human medical textbook. The wirm-blooded animals that we're more ours The water bug and the salmon clearly

Ontol Then if there exists a genetic clock of aging, is it in the privitary?

Denokla Well the patietary is probably the supported for it is based on the work done til flut a herb rader of suspected in a lener

Owny But in addition to a high number oute a number of functions that normally dockno with agong -- that have already de-22 what would be normal for younger anmain isn't that true?

Denckla. Yes We have been able to resion at the history of ceronitology that has done this Wive been able not only to restore them to swarske kivels but to hold them appevently indefinitely at these leaves. We

Onw Suppose that all the things for which mone. By the way would you care to make an estimate about how long you think it

Denckla. We have note now a usuble

does what we predict it should be able to It to the point where it is totally unconterna analysis and things like that - maily cirof luck, we could do it in a few months. We monthey a shucket enables with one

But there is another big problem (d like to to be highly associated with enzymes like those in your intestine that dipest protect rithout and hence more time consumers Other Even an examplese you have an hand

6If we can get at the process causing the the aging process these diseases would be severely curtaried That's our desired goal

presumebly to accelerate aging But wouldn't you then need an antidote? Or a means of skogate the platery from one bruing to release it? What would be the next steps if you wanted to combat the ravages of aging?

Dendkla Well it's very simple. We could use fao or litree basic approaches. We there for God knows what ensure. Only a fraction of the molecule is really necessary for biological activity. So one strategy will could employ is the lock-and key method Pairs an other used betanes berryres and the calls they interact with Lofs say this is the key that turns the lock. We could toodes to £ The mount mattern over the

substance You can develop anabodies

Orrest How can you get around such a

Denckla The best approach. I think would far known are repulated by the brain through a little structure right above the hypothalamus sends out chemical meathe pitutary These releasers factors' dimones growth hormone prolectry or the gonadal hormones. We hope that DECC will not be different from the other many

Onny is a true that the hypothelemus not only to raisage hormones but also to inhibit their rolease? Derickle That s love

Once Then there could be a neowal in-

Denskia That's oute possible

Denckis if we could find a natural inhibitor that would be just super in other case 1 turk the most sensible solution even if gH much DECO instead of trying to block which though possible in the short term is

Omy The evidence so far seems to uphold other aging researchers or induced them to drop their approaches to some Why? Denckis Weil it's a very new rise. So Fm terroril My colleagues are withtraiting am make o a claim for a maily extraordmany does two things it is an inhibitor of other homones and it may be very sensually antiphysiological Throughout the history of the homone may actually be part of a sell-destruct program. It may appoint for only ten percent of pathological aging of five percent but given our evidence in the centage of the pathological aging process

Given But is could be the margin part of its benefixis, it could win be available from onecant But, understantably formomoverus bushno of the extinction of something like that it is a title bit like being signaria. Man and spage see Puople find its alles hard to believe, and I also I berne them it sumsy DECDs as your value and we homome and them that most puople ready want there is authorit math more complicated seaan half we can go not river want them system rot?

Denotes Well its simply that this is a very different approach to pathological aprody collesgues in sign have many cliter frience. This is a new and different thoops is not heart or thirty searce clite is some of the other theories and ac obviouily there will be available to a

Orm/ Are you saying that the history of science demonstrations that every radical approach is resisted and their it would be fooligh not to expect releatance?

Detakla, Exactly Lata put in this way if i amply said that i found is better explane tion for one of the shready-familiar theorism if aging and could executed and show that it was thus people would accept it more registing by more of the maken theorism of aging may be applicated by the one Devel if it haves out to be need.

Devide, Verintramoutor beingen Thee in a strong possibility that the late the domnant way that we pathologically age. New that doesn't here the poor gave thesis apart taxens or thirty years working on age caltegor as the ky to ageing threat solution manuaum the may among be studying a ECO-despendent system. I'm not solving the the world great meri was open among world be about?

In the same ven in medicine the maccal people are hardly going to be widly anthuaistic, because their approach is to fight each classes as in comes up. Thay we not looking at the fact that all diseases that occur after publicity increases load thready.

Onter is a possible that all the deteriorative diseases are an expression of the aging process?

Devide In my cprice and ny mode suggest in the current medical mode any the persisy problems are heat takside cancer and since "hody hires the forsome hal can't be take "well-wellging" to make a dark in the pathological ging" to make a dark in the pathological ging to the poolses that cause the logarithme nenses in concer with each varied take takes taken the sing procversivic custaled. That's the desired gail were a locar were then these

One iSo any peop of research that is out adde the manifereem of ourrent research especially one as awaying as this is going to require more proof to convince people than would otherwase be the case denoted. That's noth We re outling the



Ware Maak by English Learther when you're feeling bold. O'r whon you in fheinig shy Either war, Maak by English Lankter will speak for you. We know hint hin same gur can be outgoing a swinstniar, lad badk offrer Erres. So we crewlad an saer way to communicate without seying a word. Old the bold's in your of Stojich Lankter Maak.



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For a man's unberriation to any outside of inconstitute resultants, usual a dailor with once address 1

ent system of pathology Why is It that is Over Would you say then that the line of

ical aging. What I'm hoping it will do an the tats and they re-extraordinarily good

Owny Would there then be a greater

Danckis There is carliarly that preschildy Omy Orwould the a case of people invite whatever t s- and then like the wonderful

Denckis Both are possible. Let's put it that teristics of these arimals. They die very abrupty within hours. And we re not sure men-normally kind of waste away They sick and they re kind of dragging they tails ing the life span somewhy

Ottoy Fair shough Most science fettor to carel ages talk about very expensive

people-hidden off in some Swas sanato implication is that only the rich and elder would reap the benefits. Now in your eastly available to the general population Denokia It would do initely be available. To really feasible thing, right now in both Denmark and the United States oral conpounds available nationally youre talking

inexpensive You re talking about a small problems we will run into But, with luck our

Own! Incidentally I've heard that some stop aging? Do they five longer? Do they

Oren' What would be a reason for serroy-

Denckin Them are very few reasons for removing the pitutary except very severe nitutary-unless it was an accidentadvanced dubeter, in order to prevent toprigase. When you remove a human bo

Patients without prisitanes-even if well replaced with hormones - do not live never ceds exposed to They re getting as posed to all they family problems. Cire

Omy So is certainly not a procedure you Denckis in no way DO
...and the night stalkers (manambulus performan) shall inherit the earth.

AFTER MAN is an accurating loss, at the evolution of the luture. A notice determining task, and dramatic full color illustrations, introduce the revel, the bockets bird and accurs of exotic but creditive basits (including the charming (if fellow alcryside) that will live milicins of ysiars beyond marks existion.

"A marvelous idea, beautifully presented...I wish I had written it mysell."—from the Introduction by Desmond Morris

AFTER MAN A Zoology of the Future by Dougal Dixon

Oversize format, "Justituted Introgenaut, 534 95 St. Martin's Press



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at the movie them is had included included.

We have no statup to determine them also boatstan such marks: Will we have use determine the status of the status of the Mexaminar messels and SN have Half to the status of the status of the status of the tags. The Mexaminary have out of means all sets the content measured to these all status of the workeasts could linguid acts all shows the source of easily and a linguid status shows the source of easily and a linguid status of the source of easily and a linguid status of the source of easily and a linguid status shows the source of the set have an advertised to an advertised to the set have and the source themeses

The underset societ in our listed must had a submarkine is far more winerebile than a backeted KOM site. Understanding the operation is longer as safe as they were Statistic based submartine detectors have improved ecompassion in the paid files years. The Dissiants have been using sublase powered nevel recompassions sublifies to restry lan years.

With mois than 100 kilowats of electrical power to niv their instruments: these saturlies provide ideal platforms for advanced antraubmanna warfare systems. They carry a web sampe if native lawer and an vinced ophoal detectors. For example, the care submarines often leave an infrared "solar" across the auriace satellites can see this acar and follow the sub's movements

There are other methods by which allow lines care distributions and the Rusaurs probabily take them. What is oriented to thrave do not finant houses to base can not put even at 70-twe intoric power supply of any kind with orabit before the minilightee (and only if development begins parentary could we do so then) the Soviet Union has instanely engineed 3D-kin stelems such are all development.

When one of the Sever nuclear powers sublicts for Crands have years top. The Sovet power rend situated to discuss Presultant Caners sugget call for a ben on planing nuclearersolation in obt. Gave themity tays advantages such power systems in space confer- and the Sovet monopoly on there deployment – it is hardly supprising the Destres advantance of the Destres advantance of the Caners advantance of the Sovet monopoly.

The third log of our head is our herd of 5-20 borborn is the weenable ISX walk designed in the late 1940 and built compares to 1950 and easy 1960 A Moughthined quart that the planes are didn't have been that the planes are didn't have been been and the second the area to be any 20 years of our strategic area to be not of 1960 Will will be not also your whether technology changed liab low and didn't will be about the 1960 South and being the second and will be the about the second and the about the about the second and the about the about the second and any and bottens are not the about the day and the second and any and the about the second and any and the second and any and the second and the second and the second and the the second and the second and the second and the the second and the second and the second and the the second and the second and the test of test o pagement between them is productable

Currentering distant force a where the wheatable is carried survey an attack as Soviet (CDM targes cardinals to invession a Soviet "clean win over the United States" bacomes over more protocole. The only way UI is strategic faceta card perform there makes of "inflicting unacceptable damage on the value target" of the Soviet Union would be for our ICDMs to larget at the hard same of a Soviet assould.

A policy of lounching on early warring to deniry understein Dor analy-warring toyterns just are not sufficiently related. They may not obtact Soviet submanner launchild marries Today a faile dam costs no man teammony and wear and beam costs no man teammony and wear and beam chair norma, o take a law could meen Amagendan.

We do have satellike warning systems fare the exhaust plumos of rang. Sovial CBMs. However, the Russiant have proved that they can bind our setellete they have also repectedly demonstrated killer satellites (annatrinia avecountly called appaints) that can intercept and destroy any kind of satellite. Such ettacks can be remark or about its warmon of all

The United States has committed a large fraction of its war-waging capability to spacesysteme Commandiand control nexgation, communications and intelligence research on satellities we cannot divided

This transfer very wal built may be only inherational (seein 25.600 workhood and paparts the Russims can indeed lastich a fear eskie with a high probability of total increases built in this do mena. Would the Russians benefit on ski can gMaccow in order to gain workd domination? And do they work want world domination? Theses are superstance of each intervention.

But there are far more severe threads from space. By 1960 the Soviet Union will develop the sheldy to destroy the U.S. shalege force totally and with no warning.

A single space station arried with losser waspons could be deployed before 1990. It could burn down every missial auriched by one side duareg an all out nuclear wer then insurely burn down all the energy's bombers for an encore

The sale possessing the lase-armed space battle station would come through the war unscatted. The other sale would be annihilated. If the space battle station round defined station willow is 000001.

Your taste in cars has changed. Your taste in music has changed. It's time for a Sanyo.

agr would own the whole world

Things are on quite as simple. Masters and excrutic can be definitived against the less generation of laser weapons, and the space basis station intelf very vulnerable to vascrise that cannot be theritatial by its laser system. Second generation battle stations will probably be more defensible will will also have three potent weapons

Meanwhile pulsed space lasers, purped by nuclear wappens may be allactively introsetate to caustier because they deliver too much penetrating in my energy in too short a time. Our nuclear periped laser shogund "have been tased underground successful, but the USBN schetwert to be years shead of usin the development.

Nuclear pumped laser deleves avainties, to be learnshed the minute that we delect an attack can be kept in humaned allos. A dozen such loser systems, each leursched by a singte booster might well attacks for the half-hour or more required to were out the attanck meaks an there allos

The result once again is an unfouched winner and edvastatiod lose: The vector's ICBM forces are partly depleted, the lose's mesiles and bombers are completely destroyed. The loser's mises and people are hostages for the summither of whetever submarine loses the samplished shill possesses and their mediles are mpo inni adapted the space lasers anyway

Given the preent trans if the scoreins plays the winner will be the USSR. The prepandation Scored advantaged—the Russians ability toplace large payloads in orbit, their expension in memory spacetak novel the supervision in memory spacetak novel the amount of discrite power in space-may well be decision them no in diplor the first basics battle subtrols.

The courtermeasures we develop in the next fea years —while America remains in tenor in calability to wage space wain faro—may well determine the course of two retroacts on the pamel.

Baladia wanneg is all possibility accurd in a sotenero. Thus, the first inspect status of dowards Vie must have is comprish vir un dowards Vie must have is comprish vir un the first of the source of the source of the first of the source of the source of the viscal by manned observation satisfies in the first of the source of the source of the viscal by manned observation satisfies in the first of the source of the source of the the source of the source of the source of the the source of the source of the source of the possible were with the double-source of the possible were with the double-source of the possible were of the source of the source possible were the source of the source possible were the source of the possible were the source of the source possible were possible were the source possible were possi Discourse our manned observation satelline are proy to Soviet states, but such an attack would riself be a host le act and thus manage would riself be a host le act and thus manage to the state of the state of the table and unmanned infrared detectors. Moreover we can obtained our manned geno malores. Their defaults of not next, but it is probably possible, given a large power to passible, given a large power to passible.

For must of history workse has been not stry ductive to a reormously prohable The plunder that Remea armes brough here as a segment that for more than 100 years after the Second Punc Was, Roman personship had to pay ne wait the for a leve diseables of this century workse has been society as to be unperstrately for victor and vanguathed allow that lachhology is block.

Whether we like the student or not we must expect decreme suffice constrine below thered of this flocable. Enory intertions are difficult to discover and subject to mpair change, stall general charges base their "shoat" essimate only on energy constitutions.

The United States is far bahnd the USBP in ability to operate in the catoolly important environment of specie Unites we instore the vigor of our space program – and do so very guide) – we may before the end of this decade find ourselives held hardwap to Soviet oped internote CO

CONTINUED FROM PRICE 36

any to serve automity to productions about outer space. Distay shere hardly were took beyond the next facal quarter, concentral, tig on properties that offer a quick, shortterm return rather than on good class.

Having reading in the hearing to export a constraint phonener as the studies. This month ventrain Disrey productions Rein Males and Start Leader an eventraging the Machine in the Woods. Photographics on location in the English country state. This is a durilike action chiller that are entreshingly adult and that events the based of the students work study matterpiperos as Show When and that events the based of the students work study matterpiperos as Show When and that shows hat base and the students works study matterpiperos as Show When them its functioning parentse

Mapped for a serie rough by Forece Engle Rotal 7 Welcow in the House expert back with a Welcow in the House expert back with a Gother emman. The particular estate is avoid by an expericellation of the temperature of the Application control review mone Mine Application Sovity ther the family a minut one of the Applications of the temperature of the Applications of the Application of the Application of the Application of the Application and the Applications of the Application Applications of the Applications Applications of the Applications who sociated her originally

Integrably. The Watcher's the Woods benefic gravity from Some lypoinde spocal effects and an exception and the benefic gravity from Some lypoint winds weight to the formative and grave a wonder sity except participance in a categor that has tepened erises from Baby Jane to Patient in the second state of the second with a grave or by cooking has imper than control by cooking has imper than control of by cooking has imper than control of the second second second second with a grave or by cooking has imper than control of an extension control of the second second

However looking back on New Watcher in He Whoods with Dave more sealls in the last that of the inter than 80 Hims shop mode, this was the first one werr period lidiy after to exclaim emotivative period ality after to exclaim emotivative of New York opening. As a walk-last hitter we take the the process paid don't paid emotive the process paid don't paid emotive the process paid don't paid emotive the process paid on the paid emotive the paid on the paid on the process paid on the paid emotive the paid on the paid on

Free furning a inclusir picture is not alree to Weak Darry Producticos: Involution To Automation The first time the post-Darry regime has attempted in Wash muscle number to released an induced number to make the Mary Reports after the first had been present of all cleananties from enables of the battle between the montal scalar later the crew of the Naturity an Tennity Thospanol cleaguas Junke the Stern to Stern Thospanol cleaguas Junke the Stern do Threw about the earlier drong rocals, bit has a situations of winn they withows the pacture. Dava actrils, Presarity ours pland bacausa, while it entransmissing you then bad ministrain it, awari largeting an Aniewing Gale which was a salvage operation. We amply had a probern with the way the daught entrain they fait it more detailed. Bacet them a fortialm with hey refact the extres exclude, and in gala they did the way good before, but now it is a dardy.

Elecutives at the studio admit having bear sobrend by the expension. Incurph Date says they were lookly in that the potate was fundamentally quite good She practice their over the next few years Holywood as a whole will suffer far greater deasters

The season is clear but no one has the puts to deal with the mail problems. Final hey have to bring back the contract syslim i kines that sounds cold latehored but its dammed practical. When stactors know they we got an totor is services for seven years. Shey'll wrise for you: buy plays and novels for you and form canears. What make actors get to learn their carb before bodiuse they serve all the term.

Second the industry must get eail producers and do away with committees where the neiponabitive are duyed. Dryney shift the only place that got them they must the only place berviores taking them will the rapp. Derviores taking them will the rapp. Therviores taking the must be the state the state of the second taking the second taking the state of the second taking the second taking the state of the second taking the second taking taking



meetings' from Hollywood to Waarington. DCI say that synthe with basis time to set around and waa for sports with demp has been been and the synthesis of the synthesis high hard. That's what backs what was high hard. That's what backs what was were were makes the Darpes partitive Winston Churchills and the John Kenhody's Kion and certificition. These men decopyed every one of Abbert's Rules from .

Easily Hollywood's most outspoken and vigorous septuagenation Dues pairs to continue acting in one move every six months and to four with a refrospective of hot pictures. She will also emberts on a more of colleve seminars.

Twark to pais down come if the bell two head through the warms, and tai load know what is in store More important, lever, to table them to be a diracted any circle 3 are they? I make matakes, but here's address with paid who news table become the with paid who news table become the appendix of particle taisened. If a summary dampetor, any indice the sender of a summary range to circle of a set of the Bal is not forgetor. Any circle can see the Bal is not forge

And these police groups like the Marai Mapping' They in absolutely the most hombot hing i have lover haved of in my entire Me Just the very hand is solver have of the low state that the bet charming to every one? Who says I can't need or watch what wan't or charm outside of them narrow boundates? Determines at a premum to due and it's tab helpot the disaverse

Local what twy create things lise has instabilities applies the applies of the temperature that the set there immunes of the temperature to set nothing but bias add, and then, such to set nothing but bias add, and then, such devy there is the tugg attribute standing you in the textel How can people para copter to carry it off matikes and all are an exercise to an it off.

Dospte the clearth of solid leadership in Holywood Davis thinks that there are sail arough Nilertoid dreamers to ensure the industry's future, and in particular the isocovery of Wat Dense Productions.

They if to back in the facts. The studies taken a strength of the taken and the prote. There easily a time they were adding and put the best fitnersay and darks of the taken and then tent Now all the taken and the taken aboven put there are going beyond from stower and the taken and the taken aboven and the taken and the taken aboven and the taken and the taken aboven and the taken and the taken and the taken and the taken and taken and the taken aboven and the taken and the taken and taken and taken and the taken and taken and taken and taken and taken taken and taken and taken and taken and taken taken and taken and taken and taken and taken and taken taken and taken and taken and taken and taken and taken and taken taken and taken



smultaneously with rearby sounds that occur does to the microphone I installed on an open window facing the ocean."

For three years these sources from Bosball Nations wave transmitted to Amothesis studio at MIT and to MITs Antereal Intellgence Laboratory. T warrand to induce a server's for acuted administerior corresponding to the curcles southermail aeree for melody and phrase that is perhaps fess acquired from planty an instrument, and then surely from hoaring music allowed us much of the time. The ave

Sol played the specal and literard to t in the many odd hours customary to music failuring. I explorely worted to bring this second natus, or series the ded aspendence of sound in gabal denosons to masculate and their returnents to one's perception of hammonic structure, combinators of instrumental timbre, and other sound sectors.

These VMP Analyses has recrude to adduce any birth class to the class to setting any birth class to the class to setting the setting of the setting of the end of the setting the setting of the setting of the setting the setting of the setting of the class to the setting of the setting of the class to the setting of the setting of the class to the setting of the class to the setting of the set ting of the setting of the setting of the set the setting of the set the set the set the setting of the setting of the set the set the setting of the setting of the set the set the setting of the setting of the set the set the setting of the setting of the set the set the setting of the setting of the set the set the setting of the setting of the set the set the setting of the set the set the set the set the setting of the set the set the set the set the setting of the set the set the set the set the set the setting of the set the set the set the set the set the setting of the set the se

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Additional times are used vegacies as performant. American says, subscription, my with the problem to extend that my with the problem to extend the subscription of the second term of of term of the second term of term of term of the second term of term

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Russel's music four buckine a home laboratory. On the floor wave 21 perior dates with something' growing in them

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POTION

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HEADWAR FOR SPACE — if you tacklerly became the twe withmatting of NARA, what would be your first recommendation? Banely four months in the saddle as the space program is chief. James M. Bleggs formulates bold provides. Number pries the development of a perminiently manyed space statem servence by the genes strictle. For most ideas from the auditorius Becasi, real new months. Devel

UVMS COMPUTER—The sumber concluses of the 1950x wont be without on secondarys. They elife grown motion's greated they may ensuring an experime at the type UAV Corporation in Reprintly, Maryland are univering on elipitate compare facer than tobays manifold powerful motions and 50 years doubt to implemented in the horism brain Section Section 2000 and the base of the occurring ensurementing brain section factors through to be of the occurring ensurementing brain section factors and the operation structure.

SOEINCEL POTION—Anadolesiant undertaines a Martain publicity to bear the find performance-memory of DII Earth, in Michael Berge antimy "Neo On-the sobres is exploited for for mineral wealth by a man whose tables was leader have many years bases in its datawaters. Assing "and an antime" is automotively of particiting a not-foo-unpresent function, in Thomas M. Dach I Late: "Regime" un table. ("new mascara") No instrument cases marked ready, meeting success endo eleptence jurned sound instant rendered) and mic Moleculus and anterestina (unive sound headin Headins), Theoryboards enfering to symbolic auta "isound-lead anergy and companies for inshanoing mecoantion"

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Meanwhile the strate ground floor of the table was like () potentiaties yound in motion was like () potentiaties yound in the strategiest of the strategiest of writeless down the hill past setable Wath writeless down the hill past setable Wath and the strategiest of once yet here appeared with noise. Due was well as about of the trategiest of once yet here appeared with noise the setarge. Of the state by the trate of the energy. Chem hill the transmission and by a state by the trate of the energy. Chem hill the transmission and the state of the trate of the energy. Chem hill appear the trate of the energy. Chem hill appear the transmission and the state of the strate of the energy. Chem hill appear the state of the strate of the strate of appear to the strate of the strate of the state of the s

The days offer the close of Juving Sound in U.S. Saymen Court provided in inlanguaged "lab Darroady or Dakinstony diclosen ruled the laboratory-creates. If the tarms are indeed patientiable. That aarms work a new armobia anounced that the decreave of the object backgiosi cells ever back on Earth and compreted scientifies to date the baggming of like or Earth 12 billion unare verial that had been supposed.

And when did the music begin? And when will we patient its life? Amocher says we searcely know the score? If markand a life on Earth is a day we haven't begun to approach high now?

"Bezerosi consocio of the result moving takes in a sund su conference and the result of the take and move of the result on a sundary of the basis of the result of the result of the result and even stranger at the field of bargin and even stranger at the field of bargin and even stranger at the result of the and where we are the number of the and where we are the number of the and even we are the number of the and even we are the number of the and and and the number of the sum to be able to receive of the standing and social provided the standing and social provided the standing and social provided the top of the sum of the sum of the standing and social provided to the standing and social provided to the sum of the s



scribed how Old Man Skinner scalled ink. ordo a ruo purrog an arbs messurio exactly 5 mothes by 13 inches. He found a ics student at the state college said that be rearranged to make 65 square inches (5" x 12") Since Old Man Skriner never attended college and doesn't believe in



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creces shown at top and statched from back together into the rectangle intered-

Disiliupioned young Patter dropped out of school to become a balloon vendor

Although the four preces seem to him a perfect match the angles are slightly off



gap a invitable. This geometrical creat

the paper together (as below infl) which

A-MAZE IN PLANET Here's the answer to



risues the classity to a multiple of 10 on every turn

GOAL NUMBER The onal of 17 can be reached with two 5 s as follows 55+5-5

SHARPSHOOTER. The largest number alnumbers are multiplied, including the 1

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UPSIDE-DOWNERS

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A SPLIT SECOND IN FTERNITY



The Ancients Colled It COSMIC CONSCIOUSNESS

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RED SHIFT

STARS

By David K. Lynch

Instancial tile a treach but there it was According ions there it was According ions there of a separating. And he awa squeeced a fuge lactor into his equalions to make the universe stand all but the result was so uply that he soon gave up and accepted his empiral conclusion.

1. We not praine has been been what they associate found not - or what they fought was proof - or that the universals expanding. Now it seems they may have been wrong it is we may be forced to wrive much of modern costnology.

They hack known to years that the spectra of galaxies are incel-hinds. I that is the spectra if these of a given biament appear famber to subscription of of the appear the them roomail. The simplest exaway form us. These lights in stellandolog the Depart effect, just as the pictor of a spectro start stellar that appears A due shift would suggest that a galaxy significacioset as centry of shifts are seen.

The Edwin Hubble working at Mount Wison Observatory—on or of the low Hale Observatories, in earliern Exiferns discovered that the real shift is proportional to the galaxy's obsarve from Earth Hubbles confluences obsecus. The galaxies are receiting from one ember the spots on a belicen as it is infiled as beutweetermust be expanding.

Yet come customs sugged that not all had afted and bo comercially a expansion. The trouble began when a stroncome Mathem Schmidt, all had that quataranthme enterings the data of that quataranthme enterings the data of that quataranthme enterings that all had that quataranthme enterings that all had that guataranthme enterings that all had that guataranthme enterings that takes source additional all the takes and the source that it must be leght discosithed all and the speed of leght discosithem quataranthms been found attent of the source of all the attent of the source of the attent of the attent of the source of the attent of the source of the attent of the attent of

But to be moving so quickly because of cormological expension quesars must be at staggining distances — near the observable edge of the universe. To appear ablight as they do so far away, they must be among the most luminous tes core: objects in the universe. Yet some quesies flicker repatily their biniliance changes so quickly that they must be relatively small. Only the most exotic objects could pack so much power into so little space.

If the string of leasening is correct quasars are brazer indeed. If all hinges on their red shift, Quasors might not be so far away—and thesefors might not need such strange power sources—if their not shifts are date to some effect other that index

Error DF Hatton Arp or the Hale Osainwhores with some starting discovettes DF Arp watent convinced flat quasars are so distant and strange. For proof by failwates bound by grawly file enromous and complicated planetary systems. The gatevesm such of unetary systems. The gatevesm such of unetary and they all has about the same ind shift and they all have about the same ind shift.

Yet Ap tound a tem clupters shore a quasarike galaxy had a rod shit much greater than the cluster as a while According to its mid shift the object would have to be much far that away than the galaxies around it and so its apparent.



Quarters is they high red shift decestive?

issention in the cluster must be just a chance alignment

But then Arp descovered a starting quasare-based par Dapping there were attered and a part of the set of the set by an arm of matter whending between them Arp sean found two cases where a high-red shift quasar was sincured against an ordinary low-red shift galaxy Suddaniy associations began to take Arms scheme servadiv

Duasans we the bast exclanse for noncommological district. Using the the only between Arp showes their his Virgo have systematically affected the distribution have systematically affected the distribution from the eligibratic – exclassingly utilitary of the web shows – exclassingly utilitary of the distribution are non-different from the eligibratic – exclassingly utilitary of the distribution of the distribution that the quasies in question is with the codemic software registribution are proceedings and weights must be noncommological Just from Have ap produced in graft Works

Some associationers are doing a lot of sphinking because of Arey's hindings. The real claim that Arp is simply memoryproved his insults Folgeneric that insignators with twe-lead shift galaxets they argue are orthing more than an antact of photography. And the red-infly galaxies are just a bookkeoping problem (there provide here) provide and application of the period here participation of they are are lighted the same data and concluded that there is no sparticent difference.

Most addresses all below that operating an attraction of cated by their red shifts Apps peculiar cated by their red shifts Apps peculiar well encoghits warrant cating moders cosmology this duestion. Alter all current theory has stood up well. I that a bit historitatial based and in the shifts and there the been responsible for many and in this been responsible for many approximation and an and in the shifts.

Yes Arp's observators cannot be ignored As the pulse. "Any number of cases may obey the redistribi-foldance traditionship but only one observanecessary to establish the soutenois of a new phenomenn memory a trontoemilloance establish the soutenois



PHENOMENA

The operation is not constrained to this shall have been presented to the state of the state of the state operation of the state of the state of the state operation of the state of the state of the state operation of the state of the state of the state operation of the state of the state of the state operation of the state of the state of the state operation of the state of the state of the state operation of the state of the state of the state operation of the state operati

GAMES

By Scot Morns

- German Bernard Shaw

camps (Pebruary 1985) struck a chord

YOU TOO, CAN BE AN IDLOT SAMANTH

methematical weardry of an idiot savard

Morth	Kay	Mnemoras
- Income		The Arel month
Petruary	4	A C-O-L-D (four letters)
Merch	4	The L-I-O Nor L A M-B
Apri	0	Think of the ols in April Fixed
May .	2	Think of two children a boy and a get running amount a Memorie
100		The B B I D E month
July	ō	Tisawing theworks on the Finanth of July
Aurout		EsaH-O-T month
September	6	Back to SCHOOL
October	1	Thirk of a witch riding one-broom, which looks the the runither 1
November	4	On Thanksgiving I have meny things to be thankful for
December	4	Brth of CH-R4-S-T

week on which Christmas will fail this yea

The system described will work for arry For the 1800s go two days forward in the February go back one day hore your final result (A leap year is any year dwelche by 4, except the century years 1800, 1900 etc. Years dwe be by 400 (e.g., 2000 and 2400) are leap were 1.

to summarize the five steps:

1 Take the last two digits of the year

nd add a quarter again

2 Add the key number for the month.

3 Add the day of the 6

6 Divisio are total by 7.

b The remainder tells you the day according to the day code

As another example, what day of the weak was Peerl Hartice Day December 7, 19412-41 + 10 + 6 + 7 = 64. Dividing by 3 yields a remainder of 1. So the answer is Sensity.

Following are some simple garnes to play on a calculator

10.00

Ener 52 Into a calculator Two players take turne subtracting any whole number between 1 and 9. The one who makes the density cash treps in the werker.

A wrining strikegy soon becomes apparent. Cativou findu?

Here is a visibility in the makes in a bit more chall any provide the provide the subtract a runnbox on the keyboard howcentary or writicity registering to the number subtracted on the appointment's provides turn. For exemption, it physer one, subtracts 0, physer has much subtract 3, and 3 while appeal to our read such add supply to with a writing distingery if one oxide

GOM, NUMBER

Picka gool number and using only the low function keys 4: -, -, -, x and -, and a single digit, try to reach the goal number in the freest possible keystokes. For somethic, those sig the goal number t? and using only the digit 5, one polution would be

5+5-5+5+5+5= This solution requires 13 keystrokes. There are shorter ones.

Note that the digit 5 was pressed as smos. Can the problem be solved by prepare 6 only the track?

SHARPSHOOTER

For one or make players. Equipment, a calculator penol, solution paid, and three-manute timer.

A transfer interface is choosin at rundown, for examples the fact four digits of the operal number of a closer bit. The times is maned, and wash player chair to hit the tanget in this three minutes affolded by velocity the following formula.

1.12*3*4*5*5*7*5*4 ~ where each* is replaced by any of the fear functions 4: -, x, at ~ Operations are participated from failt to right in the order shown. The player coming closed to the stated is the women.

Our rather having attempt at 1,000 as an target yielded $1 + 2 - 3 - 4 + 5 + 6 + 7 \times 8 \times 9 = 1,000$ Can you do batter?

Question What is the largest number attainable with this formula? Be careful!

MICRO GOUP

Fred Piscop invented this game for two players. Each player has a calculator and a sociected

Phayer one arbitrarily assigns ywdaget' to 0 (or 18) holes ' He may jo down for scample, 417, 161 536, 329 341, 201 446, 354 446

Payer two assigns ubivers' to treast and this oppenent. A idnest' is a single digit number pederably 6 or greater, a decimal point and two more digite. Payer two may assign himself, for example: 7.31 and his opponent 8.07.

A hole is played as blows Online A hole is player and block block brief role to hole a block block brief role of the block b perfect square presidie for this example).

As an illustrative exempte, let a see what happens when player one plays invites hole above

- 417 8 07 51 6725 - 49 = 2 6729 × 67 = 1 7936 × 79 = 1 4147
 - 41 4800
 - Inc. in concernent E. S.

The player with the lowest score for the B or 100 holes is the writter

HORIDA

1981 was an upside oden ryser. The senteer radie scool y the server when enterted. This first was ported out in 1981 other based of Add magazities, inmong other beamod yournal's whole in we also sheld the trial of add magazities and was areces 1981, and would be the last other fits was obdo. Can you marine all baset these seepsphere to the rule in byful of this output?

Many of the digits on a calculator display have the property of resembling laters when invested most of you have seen a venety of ShELL OL case.

The following bits of prote can be answered with a single word, the word can be verified by performing the accompanying calculation and investing war calculator.

 We are all familiar with the escapades of a lowable 50-pounder named Blan and his 353-pound partner Name the partner (\$0 × 353 = ...)

 "Itsur coffee; for which you pay only \$2.03 per pound and have the nerve to charge 36 cents per cup. Is awful that to fee be executed."

Freshiground en? I litel you what it tardos like" (203 x 35 = 1)

Answers to these games, and to a couple lettowers from last month — A-Maze -in' Planat' and 'la Geometry Doad?" — will be found on pege 147. Next month The Ten Best Games of the Yaar CO





By Anna-Lise Getzsche

No avoid e nearcaliteck, collost leeches, avoid spasms, get enbuigh chromium, but don't-make love ? The Neutron works by build the the expert method build and the second and expert method advacation before to second the second second advacation before the neuropart of advacation of the second sec

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Don't work on Mondays - specify the percent of heart stacks pools at work on Monstey's

Don't match does need to patients may, suffer pairs or tolopiculté fairing ease. Castver, Platbees are less i and/t to dawiseprathéroscierosis it you strates fair hére al your helth castes out, the tag hore pour testiming solator wat helth solation.

Do not have a nagoing well

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1 2004/2020

Contrease your arms only . Arm work menous carditivisiouser function, but leg work doepn 1.

Last down. Sitting down loades the last unal chock statce aveils, and lying down loavest frien by dri more

Find sorth leading. Reporting towers whole though vacouity

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maggian por spg. "Eat chim. One or two square moths at day will cause highly strolesterol and fail lewice than the same floodiusion in the same floodiusion in

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Den Este all dans then you can phen

contributy" is caused by second churching to death on a target pace of stream.

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Devision areas Mono seere attacks doour during areas showing then claring other form of eventues.

And phases, dought ensuight circleatedu-Loie chungband levels an incivit hough (to inovasue) the risk of earcier but I thank the experts haven t agreed on the oniged. DD

Arme Laje Goldshelts a medical writer fiving an England' Site was forthenly a BRC television film