SPECIAL 7TH ANNIVERSARY ISSUE

EDUCATION AND THE FUTURE MIND

• 77 SCHOOLS OF THE FUTURE • THE POWER OF A NEWBORN BRAIN • SEYMOUR PAPERT AND THE TEACHING TURTLE

DESTER-MAP OF THE MILESTONES AND MYSTERIES OF AMERICAN SCIENCE



THE GREAT UFO CONTEST ALL YOU HAVE TO DO IS THINK LIKE AN ALIEN

IOBER 1985 \$3.00



EDITOR IN CHEF & DESIGN DIRECTOR: 808 GUCCIONS

PRISERVE MUT ME LON EDTOR GURNEY WILLIAMS II ERAPHICS DIRECTOR PRANK DEVINO MANGING TERTOR RALE HELTS ART DRECTOR ANY SERSE FR

CONTENTS		F	AGE
CHOW TBY	Opinion	Kathy Kaston	6
MNBUS	Contributors		10
COMMUNICATIONS	Conspondence		14
EA/ITH	Environment	T A. Happenharter	15
	Anthropology	Masareen O Hank	22
2WCE	Commant	Owen Daves	24
DIPLORATIONS	Travel	Bill Lawran	33
sta/is	Astronomy Owen Daves		38
20043	The Arts	lisesc Asmov	38
CONTINUUM	Data Bank		41
EDUCATION AND THE FUTU FORUM	Dateaue		16
MIND	Behavior	Benamin J. Spock	28
77 SCHOOLS OF THE FUTURE	Article	Richard Wolkomm	- 50
THE POWER OF A NEWBORN BRAIN	Articio	Kathigen NcAulthe	62
SEYNOUR PAPERT AND THE TEACHING TURILE	Interview	Plan Schultz	56
HARD SCIENCE	Article	Judidh Mooper	114
DUICKTIME	Fiction	Hafat Blazt	56
SEHIND THE LINES	Pictonal	Kathisen Ston	68
JNDER SIEGE	Fictor	George R R Martin	78
DANI AMERICA	Puê out map of miestones and mystemes, UFD contest		61
RETRO SPECTACLE	Pictonal	Gerard Pomercy	106
ALTERAN SPACE PROPHET	Ouz	Robert Weil and Peler Tyson	122
WITH MATTER	UFOs.em		129
SUTURED SHELL	Phecomena	Thomas A Weward	100
3AVES	Dwatsions	Scet Mome	170
AST WORD	Humor	Gahar Wison	172



Advertising photographer in the information Age Right bells of daparete ING DRATE OF IGEST





By Kathy Keeton

 Recent incidents suggest that not all science magazines are enjoying Omry's suggess. realization, the handle water is the most match is nationation to be balance that handless environments the balance that is include the observation of the second second second second handless that and the second second second handless that and the handless of the balance balance that handless that and the balance balance that handless that and the balance balance that handless that and the balance balance balance with the balance balance balance balance has a valid handle handless that balance has balance balance balance balance

For environ megical years, Drinn has controlated mathematically to a growing American orientees, of activitie and the insurability of its respect on our fusione

Advance creates parts and the conterner strength the United States cysteneed by Word Weill, they develop a strengthen instabilizer global lake a weight light and officies addrosping file high the searches there is addrosping file high the searches the addressing of the model weight the content's strengtheners the searches between the sector and search and the patiest backets will be formadly develop and patiest backets will be formadly develop and references contents of the registrations, weight and the backets will be formadly develop and the patiest biological of the registrations, weight and the backets will be formadly and the patiest biological develops.

 If was then that Personale Editor Publisher betrigspotane and 1 decided to installes our most pervisive sincultons. Rais too, Bob had hell grads block and and public wine believes.

In many robotic dominant termination of overtage in the HW parts due partier had an many constant within the partier had an many constant within the partier of the robotic of photographic vector terms in a antimic optimism. In most the termination photographic minimum of the partie of Specific Density and the partier of Specific Density and the state of Specific Density and the state of Specific Density and States in the states of Specific Density and States in the states of Specific Density in the

Bob belaved that are of America's most entropy problems was the growing public apality abrid accerca: I acress?

Registrer, we nachte tar miscapable sonduster 1 Die knalt sich steinig sonduster 1 Die knalt sich steinig sonduster sind obtrikkig, and 2 be ner werreichsone in bart That part all assend sollie aller and sonduster sollie sollie sollie sollier sollie sollier sollier with it is refericated enganze and descetter sig retrate konder and ogstemen was being oot ofte wate

Public investments was at a function of its burgent levels incoming respective was genous exclusively automatical with the Penelogist, and this leverage with results free hards a have computer that caused free hards a base computer that caused pairs was on each water that the Cause genomers are on which the Cause genomers are on which the Cause genomers are on which the Caused genomers are on the uplices extrained with the Laberbarn.

Considering the any engineering of the response sectory are And Decision for many experientable machines in publishing (concept the world' publishes in an experience) of the interacting and informative way, we ascount to the the rest and bring that procloss divideoed dayset to is.

Centra was born, and will it a reas public fluxcitetion for increase. Today, taevan yoars filter, Dinh vanzars the word's tripped and most successful consistent science maps and, with representational values pointer than the single-copy space of Docover, Science '85 and Science Docat contained

If a sould carry, one has a significant of the source results of t

These excloses provide the parameters of the parameters of the source of the parameters of the source of the parameters of the source of the parameters of t

A a major wakatang conversion, andre Marine and a second second

The comparticle indicate advorber was law the comparticle in the future Database problem interaction of interplan Database problem provide the second provide advorber provide the second provide advorber interaction of the second provide second provide advord the provide second provide advord provide second provide advord provide second provide advord provide second provide second provide advord provide second provide second provide advord provide second provide

Nevertheless, we understatut Giurwalds galaxis concern. Nonne con ichtereinspielsetet i hond höutbolker wiesel is fiss och weide preuwreter on befrei of the rost of the world, he wright said. "We don't know is independent form on her is that understanding."

CONTRIBUTORS omnieus







TN ADDRESS.

Germe Miler write a classe paper on the imagical number strep - In it be described a ratura ability to hold approximately seven items at the seven digits in allocal Mephone number after hearing them for the first time. Its is magical for other reasons. This is Drivers seventh-anniversary ssue. So it seemed

explore when the landscape is dim, the belower that education should heighten that

The belief in schools and education as a

For instance, forecasters such as Marvin and computer communication will change even purchasing their services. In "Visions of 10 OANI

Creases to Come" (page 50) by recalling where a school in Mane is very similar to one it Calibras there will be more clusterly

'Hard Science' loace 1141 writer Judith creationus researchers who discovered

in "Making of a Mind" (page 62) contribut in editor Kithiren McAulth mompet. the ongoing effort to understand how uncover the methods of recording experitors age-old behell that early experience provides the foundation on which all subse more attention is paid to developing inlans.

learning. Sevingur Papert, believes that we (page 98) writer Pon Schultz probes htm commune programming language most errerzy-market erresh and chickle in his

An added bonus this month is our OWN AMERICA map (page 81) a comprehencommomorating the past present, and bearre and magnative " save research the reaim of human inventiveness

in Madan Stinger(e. Durcktme) (gage 50) a creative consultant for the new "Twicht (page 76) by George R. R. Martin a human mutant tries to alter history. Martin's las story to social in Otors was Sandkross

Service editor Patrice Adcroft had major this month's theme DC

DUND

COMMUNICATIONS

A Desire for Omnscience

Parwy DNA Researcher

with Crown Charmall I kine \$2551 The

CIVA Shi Denemed X-ray diffraction Click's ideas about the structure of DNA.

along with Walson and Drok-Rosaling Fridkins work was empred it is unlaturate

Editors note Watson and Cock ware of DNA hearing a helical shucture. Of course in the construction of their DNA model inthout Frankhills work. Franklin setteen

1985) which asked readers to match with

Charles J Tho Jackson M

Year's Eve 1999 The answer given is 51 to

Perhaps a source bottle of ronaledholo

Editors note Dur September eiter wein wich back was outsisted in June 1985 by J Kle Brown & Company DO

DIALOGUE

FORUM

Areaccan science and technology in the beerly find creating will be greatly effected by the greatly of schuraless baing offected bady. Exables of 1 schurzen in this become a responsible where candebase pass a comparison where candebase pass a comparison where candebase pass a comparison batter candebase pass a comparison batter candebase pass a comparison batter restring creations pass a fixed pass and barries and debase passing many pairs and the may.

The tred twent competency listing her sparked debate Black and other monarty teaches—who have generally scotted lewer on such resems—optight the the policy in anality unit. The following that the policy in anality unit. The following that the policy in anality unit. The following that the policy is anality unit. The following that the policy is anality unit.

The National Education Association wants only competent teachers hinkid and reserved. Measuring teacher performance, however, is not easy

Competency sets: Use the one in Arkansia, and short-term solutions that only result in lowening tencher morale leading the public strategorouptions about the quality of public education, and using lactness as political ecologopolis.

to commy more reliable who held improvement, local school stands much develop and implement regular reprove and the observation of cleansorth partial mance. Competenzies statt programs are also necessary to enable all teaches to keeps abarest of developments in their anable of specialization

Tosis the only one of several critical to make sure this best pacele are activity the profession. Once a parson is certified the profession. Once a parson is certified the state to leach the public stroud have the confidence that the protective leacher will be competent.

Nery Helwood Futrell President National Education Association Washington DC

It is a depressing picture. A recent Pland study summarcoad it well: "Non-recruis to traching and less academically qualified then those who are leaving manavelit the number of new entransis is insufficient to meet the coming demand." When do other facts do when flag lobo 2 strating? They are states and providother recruitment incenteer. If here is a lowing anyone with a lew bology courses a lowing anyone with a lew bology courses to practice metalone. But smith, a subbusing mesures with not being considered for the tacking profession. The public however does have an alternative. They can make that alternative the read

In my pagenet, the nears a three set include locaring ownershellawing on by the lakening generative to but part independent that out particulations of the magnet matter includes a particulation and page of the stack growing feedback matters of the stack growing feedback matters of the stack growing feedback one is three year interrules. The field regenerative of the stack of the field pagement and the matter but the field pagement and the matter but the pagement of the stack of the field pagement and the stack of the field pagement and the stack will all cholens that the cost of the stack of the stack pagement and the stack of the stack of the stack pagement and the stack of the stack of the stack pagement and the stack of the stack of the stack of the stack pagement and the stack of the stack of the stack of the stack pagement and the stack of the

In March of this year 25:000 Arkansas educators look the Arkansas Educatorel Salk Ansessment Titel in 30 particult of them passad Sectuse a wetten test store will not guarantee competent educators our leachers will since be subject to toponous new standards of classmoon avaluation to the erect of thes careers

Those who taked will be given remidual support and several opportunities to pass the test. Anyone who doesn't do to by June 1967 will not be monthed

It appears that the failure rate among black insolvers may be greater than the twike rate encong winter twiches. I do not believe this windcalast that the test is socially based. One third of the Anteneos educations and developed the test amobilist and fleat that any stool depends will be eliminated or stockastly reduced during the two years sittly development program.

Opponents of the lasting process have said that it is nothing more than a political quark los but in fact. the test is a mission of exercise sets. Also the testing process is not a one-shot activity it is part of a conlinuing process that includes tikils devel opment and plassroom evaluation

> Governor of Arkansia Little Bock AR

Because blacks as a graza acom plony or most stantadovo tasts compared with whites toother certification exams will mentatly reduce the number of black and other ministly labelies a causing an obtaintantal disater in their communities. Teaching is probably the terget indisk-blass contingency among blacks.

The public knows if hand given adequate frances support to education in recent years and teacher cartication texts are the supposed oute for this neglect. But the scores on these tests we pat runthers and numbers can be makeding.

Hearts and state tunds to support education should be increased quickly and spicializably carificiation tasts should be introduced by states slowly and incrementally if at all, giving teachers ample opportunty to pepalate for them

Our nation is truly at risk when it does more to prepare for wer then it does to educate its young citizers.

> Kenneth S Tollett Prolessor of Higher Education Howard University Washington: DC

Well-writern and carefully validated tests also good way to measure what prospec tive teachers have learned in their academic programs. A Gallup poll last year reported that 30 percent of the public and aimost two thirds of teachers tworkd such examinations for beginning teachers.

The two sincular be cataloous No standard and test can research declaration indivition pergenerations and the standard of the programmene carring standard of entry Legislators should leave the pergenerate and recognise the limits of leals when it comes to insecuring all the qualties that make for excellence in testuring Generation and and and and generating the standard of the standard of the standard generating the standard of the standard of the standard generating the standard of the standard of the standard generating the standard of the standard of the standard of the generating the standard of the

President: Educational Testing Service Princeton N.CO We or all, when very some, processor of a sphendal gpb a wind shat beneves no hints in the souther uses in the fast of a new coperace, to so hereof when it, to when might it. We need successor gam singlifes need in the world around as And, if with much famatar, we'll never completely its op head for any increase of these head horner openses of most head horner opens to new shore.

WITH A LITTLE

SEE A LONG WAY

ENCOURAGEMENT

A YOUNG MIND CAN

That why some Offy weie leve handing and disobianing a some of phote aleva scener, accentros, and medionation of handing vellows of students have some themes the system of handing vellow of the the Challenge of the United States and The Scene (brief of the Challenge of the United States have along the low of the Challenge of the United States Handing Obditional Flor States and States and States and States States and States and States and States States and States and States and States and States States and States and States and States States and States and States States and States and States and States States and States and States and States States and States and States and States States and States and States and States and States States and States and States and States and States States and States and States and States and States and States States and States and States and States and States and States and States States and States and States and States and States and States and States States and States and States and States and States and States and States States and S young people neaker that the only real hours to learning are the ones we make for ourselves.

Philips Pecroleum Company

WINDFALLS

EARTH

By T.A. Heppenhermen

The Alianced Pace, 40 miles east of San Francesco, and to be lowly in the spring. On an April morring upward good he last, nour hilds the eving upward publing weather of unbroken green against boatists bite selves. Not even a fance or stepphone public world be weap-watep whop of wind farms extended to mileo across the pasts. In the washchy our the blaces flast write easily unible from the indices way?

Closer up the disolvernage server operar in 13% reliand kengatar boodt with the classification of stream houses and house of the server of the server of the flow of the server of the server of the server houses of the first meet (CD) and then the houses of the first meet (CD) and then the houses of the first meet (CD) and then houses house the server of the server of the weak weak this is no complete. When the percenting, a count has a house. Keep the server of the server of the house house peet weak weak this is no complete. When peet weak weak this weak that is and house peet weak and the server of the house peet weak and the the server of the house peet weak and the the toose hou to be

The Sociality Sector 2 and the sector of the located in one of the workset sense in the opusity. The same is true of the Selacity Pass in orthogot of Loc Angeles and the Boss Pala Springs. Here the work terms have come, landnering landcapes most he suff of Des Quarty in mynamises foody them are inseed in floating powergenerating worksite operating with in the labor.

These wind generations are market of licencledy. Wundle on spaced, whet taxets they leak us designs lated in NAME backs was of the line and the space backs was of the line per workful, in an under like space. Each mark they are taxed wind to statistical taket angle and paradi wind to statistical taket angle and paradi workful taket workful taket angle and paradi taket workful taket taket taket taket taket taket workful taket the manufacturars contand, will help frem suprove the productivity of the wind fistin further shill

Not only are the windmits technologically advanced they are also supported by the regions environmentiality, who whole heartacily approve of them as a pollutontree alternative-energy source

Which as a minimize because "says M Ruper Cata: esociate "says Environmental Find, a nonpractic organisation based ion Washington DC."It close incl enhant tool fuels har close intest in environmental poliution associated whi meng waite displaced, or confluence critectacks characteristic of cost flows fuels and nuclear power."

Jan Beyrs's service staff scientist at the Nacional Audubon Society also in Washington DC, agrees. Windmills as stretcher tous, the says, "because they do not apol the wildemess and they do not police the as".

But it fact weichels represent environ mentalism nan wird. These wind farms produce only is mesper flow of electricity Lest year they accounted for only about



Wood Surbness Inw the Allanzeri Pass

one thousandth of all the kikowatts used in the state of California

Active same time, the power they do produce is heavily subsidized. Pacific Gas and Electric, the utility company, is required by law to purchase the power st an artificativi influted price.

The well generates threadway of the information of the second second second second to be been and the second second second which has which of the monorer an investor which has been and the the monorer and the the second second second second the the second second second second the second second second second second the second second second second the second second second second the second s

"These aren't wind farms, they're tax farms," says, Democratic congressmen Poto Saek, of California. But if you officize the tax credits, people start to theirk that you're ungetrotic."

Sall, no one doubts the real reason for the windmit's popularity California meepspeep have fund as fullowing and limited participations of FWWind Partners 1 A typical as shows two instelled investant deading close to a windmitt toward and may one to a windmitt toward and a more governor?

It is not because the two advectory of the balance and the proceeds and were balance and the proceeds and were balance to be an entering the the the second second second second second second and the second second second second second seco

THE HUNDREDTH MONKEY



By Maureen O'Hara

lar met into and her column in the pages of the StavMind Subich Than the popped up in a seminar hall wai conducting or group mut it her into the months i encountriate her repetidelly at a container on nuclear mathems at numerous New Ape gatherings, and mabook and fine called The Automoth Maxiey (mp. it before this become in "coefficie" (six hereins has become in "coefficie") share hereins to the transformed the New Ape But I had a pottiern with the law Ape But I had a pottiern with

The bit operate is the additional that applications is the councels in the structure how on a name approvement allow the horizon additional applications and the structure additional additional and and the structure additional additional and and the structure additional additional additional additional additional additional to additional additional additional to additional additional additional to additional addition

Here the beening, linear thrans was accurately as the data of the basis by the break one by Webers They revealed an interest in global basis in they revealed an interest in global basis much be the basis of the main factor to interest the basis of the main factor to the data of the basis of the main factor to the data of the basis of the main factor to the data of the basis of the main factor to the data of the basis of the main factor to the data of the basis of the main factor to the data of the basis of the hard basis of the basis of the basis of the paratees one pager reports that is main from the basis of the data of the main factor to the page of the main factor factor the set of the data of the main factor to the set of the set of the main factor the set of the data of the main factor the set of the data of the main factor the set of the data of the main factor the set of the data of the main factor the set of the data of the main factor the set of the data of the main factor to the set of the set of the set of the data of the set of the set of the set of the data of the data of the set of the set of the set of the set of the data of the set of the set

But it is not the biology of Japaniere

incidego that has generated so much entrivages managements to a much the obset of a mechanism that would perminizationators, to improve the basical motions of an emphasized twice the basical motions of an emphasized twice the basical motions obscillations. The motions provide the basic basical motion is "may become the basic provide the provide the basical motion obscillations." The provide the analytic basic terms with the motion that and the the obscillation with the analytic basit the obscillation with the motion of

Epowersopare for the here App incomments — who was strend and the comments — who was and the comments — who was and the table of the table of the table of the way does not homes and the table of the table of the table of the people who called their conditions with the mess force or expende ables of does the mess force or expende ables of does the mess force or expende ables of the surgered of bacebox who called them Andre and the table of the surgered of bacebox who called them Andre called the table of the table of the surgered of bacebox who called them Andre called the table of the table of table of the surgered of bacebox who called the table of table of table and table of table o



Eulighteenwet or reariesy size mankey do?

criticism doubt and all other activities that challenge and enlarge the continion conventius became unnecessary

Is shouldn't take a scool heren't to recognize the such anyth heren is all the mercy of the "grad communicators." The question is How could to more wellmening likes-invested thrums potential issisters have been soduced by the iden? The answer I think, is that they believe the tight way sponthicity is editioned.

In the Hall parallelapide - Coherni Moroson of the except one parallelapide - Coherni for Introduced Response of the Cohernia for Introduced Response Induced Cohernia for Interlapide - Cohernia for Induced Interlapide - Cohernia for Induced Interlapide - Cohernia for Induced Interlapide Interlapide - Induced Sector Induced I

If de tax convertions (build o fundimises) approchanget al vertice that song al traasses set i labed to state in a decretaria transmission of the song and trabeneties of the set in a secretaria tradget to example, and the song and the sample transmission of the secretaria tradget to example and societaria tradget to example and societaria tradget to example and societaria provide transmission of the secretaria provide the secretaria tradition of the societaria and the secretaria provide the secretaria tradition of the societaria and the secretaria tradition of the secretaria and the secret provide the secretaria tradition of the societaria and the secretaria and the societaria and the secretaria and the secretaria tradition of the secretaria and the secretaria tradition of the secretaria and the secretaria societaria and the secretaria and the secretaria and the secretaria societaria and the secretaria and the secretaria and the secretaria societaria and the secretaria and the secretaria societaria and the secretaria and the secretaria and the secretaria societaria and the secretaria and the secretaria and the secretaria societaria and the secretaria and the secretaria and the secretaria societaria and the secretaria societaria and the secretaria and the

The story of two is a dangedoux myth because it areas from a montropretation of source not from the collective imagination of people time was an implimed manay and those about ther were smart to follow hor less? But that is where the dorw mits or should DO

SHUTTLE SHUTOUT



By Owen Davess

A system calculated to chill the blood according to the system of the system of the system before the year 2000 a large more horacraft latect and landing—will reach will bloog blow Earth cost at only one space on a single bound and sharm initial its will know blow Earth cost at only one putting catellities into present this cost at putting catellities into present this cost at catebox 75 percent of the United Sames stuffe corps burrers

Or so ghnish Aaroppace would like to balawa "Nou-know the space shattler is a comptomer, says Preir Conclus distortion of bauenes development at British Aaroppace and heard of the design hear that develop! HOTOL "Its a flying laboratory a poix of withiabia it stage up them a weak and cames up to serve proprie

The proposed Brokin stratilia howiever is designed acchardly for carrying a payload of 7 to 11 tons (versus 32.5 tons to the shutby) no low Earth oto _ howitaby Canche adds: : Well be more efficient in launching communications save lists. HOTOL: could cur learnth costs diamatically. Their some of the areas in which imposements in performance of only one of heap period make an in the officience in the vend coptians NVSA consultant J. Peter Vaja, Byd HOTOL, inclusive tachnological advances that will not contro toolly.

In appearance only A tim. 42 to 1 step some 250 level long in sports clara wrops at the awar and these small control first in forst. Most of its cylindercal lusskage consists of hystrogen and exrygan tarks. It can take of first a 7 500 local means

HOTOL will beless repensivel to build and operate than the shutto for several seasors if trouves no expensive boordikis or tragile heat tiles. Because the cruit glebs back to Earth stowly a metal skin omwelse adversate outsidector.

The polyeries seems sample buil heres one giften HoTOLs is designed ansund an engine that just may be impossible to baild. Ostate on the engine attributility and detextably as since the cath could someday perform miking messata as well as specifie subcrites to general this much.



HOVOL. If looks good as paper, but anymers are vandering. Call 4 type 24. CMM

is known HOTOL will use a mixed mode engine, one that will breathe air for the teg tee minutes after launch

There is lot of propils scratching their heads "asystemotypes ensight Robert Salward who came up with the stop of much ender angeles. According to salward the problem is find an thronting ongines are very complex and heavy and any performance improvement they give a negated by the acided weight and development coat.

British Auropause contextes that no one knows whether the engine will work that it shouldn't take long to find out. Phatemary work should get under way this automasage Concher. "That will mode my-testing of some key areas of this prepulsion concept We think that a two year program. It is concensible that HOTOL, could be ready to the vept vess later.

Once its saidy than what supporters of the NASA shuffle once counted on communications salely to provide a market for learning services and the demand haant materialized What mekes the Balah think they will find cautomets for HOTOL?

There is a surplus of transponders in the landed States so the market has historied out. Concher admits. But by the late Ninasis the need will be there. The shuffles will be getting quite worn by their and something will have to a byfalce. Them

According to Vay, a fair larger market may open up. II don't fink any anxiety to A ya ecoparad what a damand the Strategic Deletes Initiative (SDI or star was) will be on iterative sensets. In a says, II will expan at least thirty times the projected shattle capacity Much of the cargo for the settem could be camend by HOPD.

Although HOTOLs is an untrained cargo call in the long run if could entry be adapted for parsengine. Brinsh Akroopous emprese have allowaly aketched a selcomaned passenger pool to be dropped in the cargo allowy it is not intraided so much ther train to space asys Concrete at to lang dispace trained on the level complete part of an other. Then is earth the demogenees and globo this defend in from Plageted time for a top time is noted to from Signery Australia, amme 67 minutes CO

KIDS AND SUPERKIDS

MIND

By Benamin J. Spock, M.D.

Consider the work in the Totace is provide the acception of the sector of the provide the acception of the sector of the provide the sector of the sector of the provide the sector of the sector of the topper of the sector of the sector of the topper of the sector of t

Today we have severithing leaders the body exercised for resolution resulting instruction to childrenia way with the manage repract Management photo intro, and argained other photo photo intro, and argained other and photo photo intro, and argained other and photo photo intro, and argained schedular and photo intro, and argained schedular and photo intro. The photo and photo intro argained argained schedular and photo photos argained argained schedular argained argained

The does here young difference on public of executing point drawners of alwares and the service of alwares and the service of alwares and alwares and the service of alwares and alwares alwares and alwares and alwares alwares and alwares and alwares of the test and alwares of alwares and alwares and contractions is alwared to alwares and the service alwares and alwares and the construction and the service alwares and the service and the service alwares and the service alwares and the service alwares and the area alwares and the service alwares and the alwares and the area alwares and the service alwares and alwares and the area alwares and the service alwares and alwares and the area alwares and the service alwares and alwares and the area alwares and the service alwares and alwares and the area alwares and alwares and the service alwares and alwares and the area alwares and alwares

Children first leven by the unfolding of instruct at certain stages of development toggered by a strong desire to do what of QMU they are parents and sbings do Botwern 9 and 98 monte, win flat learns to wak by seeing athere do L. Blond children have ago of two chatten leadly pick up vocib ultry and the underesting by parmial websit instructor, by imating and denihive with team methods.

Telden Hey begin tomal actualing dilition can be strongly individual to learn to read if they have parents who read to bem. As they become restrictually capable of documenting lefter shapes, they may add the channes and sounds of learns. They will work to go to school unlines samples by bod experiments. biolable of a share they see usidar childrin og they work to makes the interne of his share of his of his

Childrer generally pursue extring more presenterly what the organis data lat the learning was there and not their parents or topchers. This does not man that parents or weither and wordom should be ignored. There would be no extraols, for learning of parents data damand them.

All parants have a healthy dealer to see that children mature and acquire skills



kuse dud looked into filmt stock schooling

according to the Industrial differ (cost)whether is to be extend on a celeforbarthan on a South Sea stand or a noceasia/ periodicarial into (Lenda Data). Those periodicarial into (Lenda Data) Those normatication and remeil Lable (preston allor generation in a culture like o sea cost and a cost of the sea means of the sea technologies into account like operation allor generation in a culture like o sea cost and cost and the sea means of the sea technologies into account of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea of the sea means of the sea means of the sea means of the sea of the sea means of the sea means of the sea means of the sea of the sea means of the sea means of the sea means of the sea of the sea means of the sea me

Once if the lew timps that has remained constant is our befoll in exclusion as a leaves advancement. So it is no wonder has young parents brought up with the Ammcan declosation to goting alread likel for lace of new educatorial methods that seem topprome as waithin thesid start.

How well parent occide well käiming opportunities to part these children without or of values children's term to be parents, the well and should be on important to be firm than a capaby reported. The opportunities of the should be on the parents parent to be the should be on the parents part to be the should be on the parents parents in the altern's the parents parts when the backet the sparents parts when the sparents parts when the backet the sparents parts when the backet the sparents parts when the sparent parts when the sparents parts when the sparent parts w

What I don't belows all children should go to preschool—many can get a lot of the preschool advantagos in their own formes and neighborhoods—I do think those who do po will prich to some dequee

European in increator Mens Monoscon was the thir private and indigent and post-increasing an indigent and post-increasing and indigent and being a second a post-off-and indices in the 1956 who decread a post-off-and indices post-ing above making acres and observting imposter indices and observation that would intigen amplitude to the second and indices and an observation that the constant new data

How to punctuate

By Russell Baker



Processing Rangell Subar symmetry of

When you write, you make a sound in the reader's head. It can be a dull mumble - that's why so much conventment prose makes you deerw - or it can be a joyful noise. a dy whisper, a throb of passion. Listen to a voice trembling in

a baunged room. "And the silken, sad, uncertain

number of each purple curtain tholled me - filled me with fattastic terrors never felt before " Threek Edwar Allan Poe, a

master. Few of us can make paper speak as vivadly as Poe could, but even beenners will write better once they start listening to the sound their writing makes.

One of the most suportant tools for making paper speak in WHEN OWN MILCO IS DEDUCTIONED. When speaking aload, you at

concrupte constantly-with . body broases. Your listener bears common dishes, question marks exclamation points. quotation marks is you shout. whatper parise, wave your arms. coll warr ews. wronkle your brow-In writing, reactuation plays

"My well of the male should be your well, mo-

the role of body language. It helps markers hear wer the way you wint

"Gee, Dad, have I got to learn all them rules?"

Don't let the nales scare you. For they aren't hard and fast. Think of them as ruidelines.

Am Luwing, "Go ahead and unctuate as you please"? Absoutely not. Use your own common sense remembering that you can't expect traders to work to decipher what washe trying to say. Three are two basic systems

1. The loose or open system.

which tries to canture the way body language punctuates talk

2. The right, closed structural watern, which here's closely to the sentence's grammatical structure. Most writers use a little of

both. In any case, we use much less punctuation than they used 200 or even 50 years ago. (Glance into Edward Cabbon's "Decline and Full of the Roman Empire," first pub-

example of the tight structural most elegant.) No matter contern you prefer he warneds punctuation marks cannot save a centence that is hadly put together. If you have to struggle dashes, you've probably built a sentence that's never some to fly no. matter how was tinker with it. Throw it away and build a new one to a sumpler design. The better your sentence, the easier it is to punctuate.

Choosing the right tool

There are 30 main cunctuation marks, but you'll need lower than a dozen for most writing.

Lean't show you in this small space how they all work, so I'll stick to the ten most importantand even then can only hat hathlights. For more details, check your dictionary or a good grammar.

Comma[.]

This is the most widely used mark of all. It's also the touchest and most controvergal. I've soon agang editors almost come to blows over the comma. If you can handle it without sweating, the others will be even. Here's my policy.

1. Use a comma after a long introductory phrase or chuse. A/an stoalmy the crosen reacts from the Town of London, I went how for and 2. If the introduc-

short, forset the comma: After the theft I want home

3. Por use it if be confusing without it, like this which the Bank of 4. Usu a com-

elements in a

Denuer Mint, the Bank of England. the Tosoer of London and new tasys bank.

before and in the senes. This is common style nowadays, but some publishers use a comma there, too.

5. Use a comma to separate independent clauses that are joined by a consunction like and, but, for, or nor because or so. I shall return the crown invels, for they are too .

6. Use a comma to set off a mildly parenthetical word grouping that unit essential to the sentence: Girls who have usually differ from bors. Do not use com-

mac of the word grouping is essential to the sentence's meaning: Girls uko interest me know how D2 5271.52

Z Use a comma in 2. Use a commit in "Production pair but cargage using preserving page on the mediatrice serving with an exclamation point direct address: Year magesty, decision must, a what is and passible services with an address of the addres blesse hand over the crown.

8. And between proper names and titles: Montanae Sneed, Director of Soptiand Yard, was assumed the case 9. And to separate elements of

prographical address: Director Sneed comes from Chicago, Illinois, and now byes in London, Enviored.

Generally speaking, use a comma where you'd muse bruefly in speech. For a long name or completion of thought, use a period.

If you confuse the comma with the period, wou'll set a run-on sentence: The Bank of England is located in London. I method with over to whit

Semicolon [1] A more sophisticated mark than the comma, the semicolon keeps those two thoughts more tightly linked than a penod can; I steed crown jewels; she steeds hearts,

Dashf - land Parentheses [()]

Warning! Use sparingly. The dash SHOUTS Parenthears where per Shout too often people stop Istening whisper too much more ple become suspicious of you. The dash creates a dramatic pause to perpare for an expression needing strong combasts. I'll marry you -If you's rab Topkare with me

quietly to drop in some charry. information not vital to your story Destrate Betters) during thirst ("7 long robbing your treasy bank," she often said), she was a temple danier

Quotation marks [" "]

These tell the moder works

stud or wrnte: Berry soid "Levelr

sango "Or. "I cavit tango," Beny said.

Notice the comma comes

before the more marks in the first

mind. Do it that way anyhous

example, but comes unside them in

Colon [:]

for what's next; a list, a long curcha-

tion or an explanation. This article

is reddied with colors. Too many,

A colon is a tip-off to get ready

movbe, but the message is "Stay on your tors, it's comment way."

Apostrophe [?]

The big headache is with possessive nouns. If the noun is amgular, add 5: Fhoted Betty's agreen If the noun is plural, simply add an spostrophe after the s-Those are the girld coats The same applies for singular nouns ending in 5. like Dickense

And in plural: This is the Dichenses' contage The possessive propound

hers and ats have no spostropha If you write it's you are saving it is.

Keen cool

You know about ending a sensence it. Sure, you can also end

not makes you sound bearbleer ate its own excitement. Filling the maper with !!!! won't make up for whist wast writing has failed to do

Too many exclamation points make me thank the writer a talknow about the papic in his own head

Don't sound panacky. End with a period. Lam serious. A nerod. Understand

Well... sometimes a question mark is oken.

Thugell Baker

Today, the printed word is more vital than ever. Now thereis more need than ever for all of us to sead better, while better and

International Paper offers this senies in the hope that, even in a small way, we can help,

If you'd like to share this article and all the others in the series. with others-students, employees, family-we'll eladly werd way reprints. So far we've sent out over 20200000 in researce to requests from people everywhere. Write: "Power of the Printed Word" International Paper Company, Dept. 13X, PO, Box 954, Madison Square Station, New York, NY 10010, consummercian new connect



b.70z. 1 Sanyo gives birth to the smallest plain paper copier in the world.





The SFT-600 Portable Personal Copier. Not only is it the smallest, lightest plain paper copier ever made, but it also comes into the world with some very dis-

like a cartridge system that virtually eliminates service calls. You can easily replace the cartridge yourself, and each one is good for up to 5,000 copies Which makes the care and feeding of the SFT 600 cost up to 40% less than other

And, at 10 copies per minute, you won't find a faster personal copier. The SETLERI can even make in to 29 comes at a time. Which means it can take on some really grown-up size copying jobs

The SFT-600 is talented, too, At a ripe young age it already knows how to make copies on almost any paper you feed it.

letter size. In mailing labels



The SFT-600 is so light, so co we've even given it a handle. Which means it can go anywhere. From room to

room, office to office. Anyplace was need to make crisp, clear copies in necends. So call toll-free 1-800-524-0047 to find out where you can pick up an SFT4000 of your wory own. The SFT4000 Partable Personal Copies: Saryo's latest addition to a growing family that includes conters for virtually every need.

Why, it's enough to make any parent proud.



OVE AMONG THE VAMPIRES

EXPLORATIONS

By B/H awren

riside a damp, hollow trap in up into the darkness with an initianad the allnuebo behavior of vamore bats buil as a way scientist once need "Let were the bats prone to bombarding here to contend with huge triar dwalling reaches that would dart across his body. And occasionally one of the bala bit. Wilkanson a blockst from the University of California at San Diego and his assistants suffered research before they were through-and

isoncelic the team's sacrificial efforts were arriad at defining the role, if any, that altrusm plays in the atomal world

acts another with no appenent or immediate breeft in cool' alman was brie thracht basic assumption." Wilkinson says, "wes different is a real contractiction to what mest to speculate about the possibility of abusim in the co-called lower animals Fieldwork soon worksated theory Baboons, created SQUINDS, champervales, bars, port certain

Controversy arcse though, when the held researchers triad to determine how aratistic selected the recipients of their largess in almost all cases, it was thought, animals engaged in acts of struism only with blond relatives a wolf who shared its lood, for exercise would confine that selection mont be a chying force in all retebehavior. He called the driving force

recorder's also known as "It for tai". Smety signed recording the analysis same species if there that the recovert

set out to test. Uwe Schmidt, a backcart them requirations food for one another But cachyly or if it was part and parcel of them were sharing lood only with close kin Quantecaste where the vampre bab were

Wiknson's first pb was to trep the bets mark them to establish their family rate on steps and it them with radio transmitters. that all of that was rebringly entry. Not on-His tirst adjempt at trapping myched



seeing of the cets to the tree bunks where the bets were roosting speaking them gloved hands as they hed to escape But the bills proved to be formidable escape artists and started movero to inso-encryothin fooling they were serbert, purposely moving

up nets at the exits and their scenno the attance, though the bets simply relused to leave the trive. They learned real text ! problem by setting his nets farther away from the trees but still in the facht path the tells took on their feeding forays

Once the bats were marked Wikinson began observing their feachnes fillaged composed primarily of protein) that the bats take in more than its body weight in blood each right sail to make ends meet. But faeding observations was to determine sual proteirn 1 can teke as long as 20 minutes to make a feating increasion at a the sion of its prey, the vertipre does not such

Nort came the wital question: What happens to an unled bat after it returns to had been unable to issue the roost in the Inst place? Getting answers to there questions proved to be shuddeningly-in not temlyingly-difficult. First of all because to don resonator masks before entering the only about one shared regurg tation every



STARS

By Owen Davies

an obscure corret worth the study? And do they make up for Americais failure to send probes to Halley's Cornet? Even for a skentic, it is hard not to applicat

neurol seal that out it over Messen cuit tak m of yours in the hatory of our spaceingenuity got us to a cornel tirst-and with a try burber and a used space probe

studies in mind from the first. He tried-and farled-loget the probe a more powerful procedure made the comet visit occubie.

Farguhar first weighed the idea of diverting ISEE-3 to the terned comer that without And the mealor would cost only \$5 million

in plan. He needed political support riskle months. At one point he waged his cam-36 OME

In the end it was a unique feature d reide Earth's geometric tail. That activ

visiting the gedtal was an attractive ideal



Just what ICE found at Gracobini-Zhrine plan put ICE only 10 000 kilomatera from comets Von Rosenvinge says, "but it's not como to be the brazest and best mission

lates may be what blad the scales in imeging systems, sust as we would have free to do and they are not-pass coposite

Giacobin-Zinner was not the last stop for ICE Next March according to clian it will analyze what they find measuring nucleus most productive career a relativaly humble

for students in grades 9 through 12 Each actual submits one project with Halky's a photo of the come! to a computer program on comptany orbits. The too fives worth \$1,380 Their schools will receive May 12, 1986 Teachers should write Corret Halley Exploratory Quest, Bushnoll Downers of Research & Lomb. 135 Preserve Park Carrie Fast Hartford, CT DRIDE DO



THE ARTS

By Isaac Asimov

bogan vering obol stores in 1200 bogan bocauses i verine to basia away form the tensions way in which waters made tools after sociales measures or pathate symbols of pervecution (planned to describe the (bocks minichnes with builin adaptacht). It was not until 1942 bocauses with the accuragement (a sume Accost the (put how instrument) (a sume Accost the (put how instrument) (a sume Accost the (put how instrument) (a sume Accost the (put how instrument) (a sume Accost the (put how instrument) (a sume Accost the (put how instrument) (a sume parties (put deviced the "three laws of bocks (nd doing so) become the sait parties (put deviced the "three laws of books (nd doing so) become the sait parties (put deviced the "three laws of books (nd doing so) become the sait parties (put deviced the "three laws of books (nd doing so) become the sait parties (put deviced the "three laws of books (nd doing so) become the sait parties (put deviced the "three laws of books (nd doing so) become the sait parties (put deviced the "three laws of books (put deviced the "three la

Here are the time taws. A robot may not reque a human being or through maction allow a human being to come to hum a robot must carry the context gene it by human beings encept when such orders would context with me has law a robot must present is com invisione as long and such protection does not corrlict with the last or would laws.

These takes have anough lastade to make any number of storest possible. After all how do you define harm? What if ordess are given by a human being who is too young to understand what hell doing?

Over the year the calculated and observe exclude and non-line address all worth law so the cognit tense only more important flab.com any of the long-line important address the which makes a law of the cognitive important of the flab.com and laber turnantly to come to hermit i lable coded a classes to the finite cognital laws so that they would in no way value the aparth law.

Some people have negacial the original laws as ital-laws. Alored I a stew is not allowed to have a meter mult obly orders and may even have to sacrifice has late to failow have orders Buil new the have laws are expended or the multi-hall have powerned the use of tools ance the Sante dro.

Consider that no tool as useful if it's going to team the user. That's the test law of tools. That's why knows have bendles, and electronic consett trivit fusion.

The second ize of tools. A tool is useful if it close what the user wants it to do if it take to do this it must be discarded. And if an one you make it work at the cost of having it injurs the user it must be decarated too

The third law A tool has to last An submobile that fails apart when you try to drive it a no coord to anyone.

The bary worked to trap as thy stones were sample and bobbs were portuged to rostnap more than tools Profumately to had to place method and transfer barge the even mole complicated situations at to keep meet than to even placed in dang to it had to make my bobbs mean human. The ord test, we specialable. The obsets became simple indexes was but the toolors were bound by the base while the humans. The single

In my novels The Cased of Steel (1953) and The Naked Str. (1956). Invention the miscale indext manuel in Daniel Disease Though their Instalace that a totol behavior as would expect a trily virtual structure to behave the law of diseases built of virtuals further being. (Or because I believe the word virtuals makk of fatteress in man up disease further of tablets



Autory codiying laws for robits and tumens

a truly decard human bang expected to asiad harming anyone (Hod Isa/) Walah Lha or the expected to do his or thar duty percendiaa/? Walah the or she expected to die 4 necessary, rather than harm someone relac (that law?)

To be said, the three laws dictated IF Denset's actors while is depart to man being behaviors is cartian way voluntarly. Yat as inaaliy a voluntary actor in the latter case? Is not a depert human being driven' by he or her conscance of by his or her same of drives as strongly and is measibly as a robotic controlled by the their lave?

By interacting the set rest in the of the set of the se

The is why I saw the need to create the andh law the law that states that humanly must be protected at all costs. This law is been to our murinal idepacially new when we have the possibility of nuclear were and such problems as overpopulation and degradgetor to aux environment.

So in real life, as well as in horstwer we contract the age old problem of searchice is fibre to searches the like of an individual for the good of an abstraction inwinkly hummery? Or table we be good and by English past and phosopher decomy Benthem's words. The greatest good for the granical number ? Who decades such qualition?

In houristation and barry, an upporting secal to Foundation's Exist, an upporting makers, though Loans claim to have found any daturate answers. All we can reely do is welk together to come up with satulateris to the ungent problems that face us all well base that the world with sarvive DO



CONTINUUM

The The Total age of the behavior all double in the second memory of the adential Background is the energies-the transmission of the second Background is the energies-the second of a disease of the second Background is the second of the second of the second second second second second the second of the second second second second second second the second of the second second second second second second the second secon

The internation lists theo has carried on a long and impose second omakes with the number / The Chanses at the revens the 7 Segree of the Remboo Ghow a group of where mere who gave up the tataliand based of the of the thereful contany as to be all to of outdoor wind dimiting and posity. The Japanese in turn court on outdoor wind dimiting and posity. The Japanese in turn court on outdoor wind dimiting and posity. The Japanese must be active cased of Jam-Him 7 acts of creation. The 70 parts of bondage the 7 acts of dimiting and 7 of district for 1 parts of landoor the 70 chapter of Jacob the (USU highreous in taxas), the 70 judges of the Sanhedrin, and so on, 7-fold

And other interactional to always according to provide the synthesis and the synthesis and the synthesis according to the comparison of the synthesis according to the synthesynthesis according to th

Wy determine the Ar solid is collegated with they parametry text Being, Being, Haye, Haye, will Dainy Hone an enteremitican with a ready interested in 7-dimensional laboration and the solid entering text of the solid solid solid solid solid solid solid the laboration of the solid solid solid solid solid solid solid the laboration of the solid solid solid solid solid solid solid and the solid and the solid and the solid and the solid s

Harts Kandig was Othri a founding executive editor

CONTINUUM

SPACE PET!

If R2-D2 seemed cute arough to have around the photes, says psychologist. Philip R Hatris that sugnicare in the future a kot of lonsly people in space will become emotionally attoched to their robots.

In the safe, stages of space coloscattor if's not geing to be feesible to sendup dogs and coat. "Hans says The coat of petiting them and their life support system—up into orbit and beyond will be too high fluid they wont matter, because the nabus working on board can double to petit

Its counce to mappin When your on space and petty much removed and brank, and you ve got those rebots that can walk and takk and mapbe even took humanities, why not develop a relationship? Space engrounds can achieve encourage these strachmarks by desping furnititios that acoust

It is a kind of coping mediansm seen before. Hit is says, in the wid West. The first poneers were mostly men who mased women, and they gree attached to ther hostop and even their guns.



Sar Was Perpetitives?

In bouse windows, for tecoit house windows, for teconty purposes I imagine a lot of people are going to get attached to them, too "

International analysis is plant to an invest the is writing on the putural changing repeatablaat by update megation, which is may write a "turning point, in the party of furmain cubtam". Epace satisfiest the attributes to the pupit fullog, as these of the on the moory, as the old and the one the moory man's behavior, the prediction like Swellies do attribut ther annual perceives of chartwest

esedy manufacturing a robot dog, it looks as if Herrs may be proved right on Each earlier than in orbit. But will robots really provide all the employue satisfication of hay pets? Proty much, to Hamps mind "Suppose I have an insh satar I can program everything I like about it into a very small spece and re-chase all its qualities up there until I can on the real time.

-Anthony Liversidge

If you keep a thing for seven wars, you are sure to find use for it "

-Ser Walter Scott

RIEND FINDERS

Attair Herb Farmer's B-17 Flying Fortress was shot down daming a bontlang raid over Bartin on April 18, 1944 te and ten fellow crew members wound up in Stateg 17-8, where they spent 13 months in a POW camp

They and some 4,000 cm⁻ era, who doubtes to compeweigh TV resures of Hoparts Henses, loat track of one another after the ware ended Fairmer, for isstance, worked in Alephan teal estate for S3 vers. Touch source/ day went by half he dun't think about he AF Force buildies in the newly-lourth bomb group and he support comfain, and compandient they strend Finimer Lumid sequenting take year when he decided, "There are is for of popple out them toking the one simplifies (though the problem was solvidie with a companie"

So the founded a company saled Frend Finders Marreports (FPT) new based in Seatch He bought a \$150,000 spectratived introuge Brittin Lee installiget Deployed Diversitied Incomporated (FDC), in Houston, and bagon trying to holp people in similar posteriors indi of third, classifications land of third, classifications land of third, classifications polings among others



Sombor organs power with Priving Forsteam. A new control we with conment ferman fre a first who was looking for his old we'r Loobing.

to ten gigabytes its capacity is 30 million names which can be expanded to 200 million a number that would pillios Farmer no end

Write loading for ealinery in entry we police these although we police these although we police these mails access of FPI demails access of FPI demails access of FPI detections are objective Regislations and is line. He control control size representations and a size of the size of the lists it control and the control on the size of the control on the size of the control on the size of the control on the control is well and the control on the control is access to the control on the size of the control of the control on the control of the size of the control of the control on the control of the size of the control of the size of the control of the size of the control of the control is a control of the control of the size of the control of the control is a control of the control of the size of the control of the control is a control of the control of the size of the control of the control of the size of the control of the control of the size of the control of the control of the size of the control of the control of the size of the control of the control of the size of the control of the control of the size of the control of the control of the size of the control of the control of the size of the control of the control of the control of the control of the size of the control of the size of the control of the control of the control of the size of the control of the control of the control of the size of the control of the control of the control of the size of the control of the control of the control of the size of the control of the control of the control of the size of the control of the control of the control of the size of the control of the control of the control of the control of the size of the control of the control of the control of the control of the size of the control of the

Farmer is confident the company will eventually gain the cooperation of the milicons of people it will take to make it work.

Populsation medves such besic information as name dide of birth, last lerown address, maiden names when applicable military dide and high-school or college records

Farmer, a man with faith in his own compatier system has so far managed to locate all but four of his 8-17 crew makies. Two of those twee deci and the other two, he seys." probably just don't want to be found.

THI can be contacted in the United States and Canada by caling, tol free 1ado FINDERS

seorge Nobbe



Performental the fature self do visce them just artell ruce

PERFUMES

A New York City company s attempting to create perume lihat enhances mental and physical health

A strass vacuory mingrance has been paterted recently and will seen be on the market says Heary GA Walter chell executive officer of International Flavers and Frogrances, Inc. (FF) Walter envisors to trav what Walter envisors to trav what Walter envisors to trav what has a section of pressing, increase alectrose, and order allocation and

Brain stput from smell and laste receptors are known to affect visit bean turotons—reprocladive behavior learning, memory, and emotonial states." Weiter says They probably after other volkbeing 'He is shrifting volkbeing 'He is shrifting research at IFF to emphasize vhat he calls the 'new biol toy of fragmanices

Although not staned as a scantes! Wolfer his become interested in the neuroscierce of smell (affactuan) and toste (gatastary). His company is conducting studies to determine how smell is introlved in such basic drives as angler arounty, depres son and fear.

The infimited init between small and the autonomic menuous system malkes if an individual whice for stress reiduation. Watter claims Scientists have known for some time the offection forkys a crucial role in the fight-or-flight rosponse.

The possibility of using coords in treating schuzphen the R # Mo under meets gabon. Oblactory receptors make clinact connections with system flowgft to be revolved in the disorder's pathology. Nevert schere complexity Palewist often complexit that four bodies area is and some doctors and nurses can even aternity some schuzphennas by a charac-

Walter is cleaging ports amed at lusging people emotionally and physically for Vechnic, drugs music, and mediation have long been used to releve stress. But cas have relating fragmotes can be ability used on is deal bites for this purpose withou risk '---Come Zweig

"Nou should know a man seven years before you str tis fire "

English provarb

SKIN BALLOONS

Inserting a beloon under healthy skin to expand it for use in grafts "is probably the most inportant innova tion in plastic surgery in ten years" rays a University of Virginia researcher

Dr. Mitch 1: Edgetton said het hoftmisse can ad poten software and software and software between burns, bertmarket, and leftoes in the procedans, a serie balance as placed beneath heathy skin or mission and solwy orbandad by mytchen of salved solution over a pend of wields Surgeons them remove the balance at movethe sint othere 1 is needed.

anothed from saving their actual body grow new tosue Edgenton says. The expanded skin more nearly resembles cormal skin hang graits or flaps de, "and you can expand fat and carep tosue such as muscle, with the iterwise present so that

The ability to hose and shape the vegethild some some particularly useful for repair ing cancer deformities on the head and face, Edgerton notes Patients who have negets or ears to tumors or accidents may have new ones incommunated

Currently the researchers are developing a balloon that expands automatically, and hospitalization is frequently not incurred for these tendary to four month treatments

-ALAN MALIFE

Good Lok les in odd .

---William Shakespeare



MISSING MATTER

Physicials at the University of Florida (UF) think is supercooled magnet the sais of a double-door refrigerator may help them find the missing or global matter they suspect makes up 90 patient of the universit

It's a jaming notion that we cannot see most of the instaur in the university' says, physics professor Piene Skrive. What this dark matter main the biggest questions in science today.

Service and lefters UP physical limit (score first suggested the possibility first an anoni may be the muchscupit suppit (in numbers of 10000 billion per cubic moth of space, they would account for the suppress. move as though they are in the grip of ten times more gritwity than accounted for by issbile matter.

Even in presel surroses though the streng benefit of the secon would be very own. Typu hereweted all the analysis and the second while tootstaff led Skiws says I would light a cere-wet bolin to one second. While reterwy useless on Earth in space the energy might in space the energy might in the detargo between stars. There mit much else out

The assort theory is only one of solvest that sciencies have advanced to coptian the maximum problem problem if has become a very popular game to guess what it as any Skowe a native of Belgium who studied at the One conclused the histman new approver to be



Show advocation has been as scence Foundation to tend a half influenciate experiment to disted the avoid require a magnet cooled to nearly ab solution zero (~400°F)

Then, he says the scient late would reserve for the abouts in a marrier is smaller to bring in a vory weak station on a shortware racko--only it's more difficult.

"Exocid take years" he asys. Filtray do it, though it would be a double coup They would not only lind the making matter, they would also before understand the factor that holds the nu clous of the start holds the remaker Weare —Aker Weare

Which he had opened the seventh soul chara was skince in hreaven about the space of half an hour " --Sant Joh

SEATTLE FOOT

Harming and participants are advices that have aceaded only in memory for leg arms, how built have weater the socialized built built and they had their own legs of they had their own legs that hey had their own legs that he had the hey had the rest based own legs that he had the hey had the rest based own legs that hey legs baselend and bannes, and own follow secolary runs



A Surgers grant with / s

seven minutes per mile." De Burgess is director of the Prosthistics Research Study Center, in Seattle which developed this foce for the Vetenata Administration

Aufferthe in appealain coline Seattle foot has a functional inner coals of the Spece-App plastic Delvin and is cowards with an outer claim of polyurathine. Delvin attaccion the force of the ampuse's body weight then select the appropriate of the empure

It optically makes the amputed field as it he has a oalf muscle again, explains kerneth Carpenter a the oanter "Autents say, 1 feat like I have my leg book.

The tradi is about to be involved in a one-month study with 200 velecens "Once the study is completed Burgens says. Lexnect the Seattle locit will become commercially assuiable." The rotal cost in o precide, will be no more than \$100 — Elino Mahama

The gods delight in an odd' writter



When the second se

CONTINUUM



secret is to get ris or the watching and its and an synest car.

WESTERNIZING ORIENTAL EYES

There is an excessed unread States, as well as the de States, as well as the de different weldes in de different weldes and more Assess deriffy and the Welder There as the surgitant Physical There are therein the subset forward here place surgitant Physical distances on procedure therein well as an own be molicial more on procedure. Owned

These are two dilliniti, differences botween Asian and Cauceran eyes, Metsurvage ponth out. The upper optimistic and the property of Crientell people there is a webbing of the new.

the past, surgeons deait only with adding a fold to make the eye look bigger is coma and more applicatively pleasing. But if the web was lemoved in frequently griss services in web years and a service to web permaranty' says Meteoralize who applies facual please sargery at the University of Southern Califorms at LoS Angeles

The operation which is performed under local anesthysia cossis between \$1,600 and \$1,800. So fat Matsurega has performed mose their 2,000 of the Weat emization procedures.

Although the empressions the operation is not for every Asian Matsurage, estimates fight shout to pancer to Chientals are interested in although the appenence in their way. But he include on assam that his patients are relevant to before this Walon society by chair grap the rocal chargedentics.

That is the furthest thing iom the sruth " clams Matsunage who is of Asian Second firmskit "These peosle still look Onereal after the operation They are simply lying to improve their cellimage and the beauty of their ryse 1 don't see any difference botween (an Oriental changing his eyes and) as Caucease improving a dioppy gwilling or an italian or Jewah person histing a hoat noise fixed.

-Sherry Bake

ity is it that we entertain a beket that for every spose odd numbers are a most effectual?

PUTTING COMPUTER CHIPS IN PEOPLE

A macuation that may one day be implicituated into the living norwas of amplitude has been developed at the Neusechastrate instance of Tachnology. The chip optical nology the chip optical help amplitudes control with call intera—and it might even allow that to operate machine and computers by remain control amply by using their minds.

Proquently stars an ampaator, the nerves that had controlled the mesurg limb are still living. So Mill been prior David Eddel designed a chip consisting of gold proute etchaid amb a thin miscin water that could be emplanted in such reveal The selection as const interveal.

parallel sizts and enclosed in a plicone-subter tube What the only is implicited, the severed nerve and grows through the tube and into the stats, making contact with the decuse.

Edel and his colleagues have implanted the chips into the severed log nerves of rabbits. When the rabbits move there legis readings on an exclusion escape show that the chip is picking up signals from the nervise. The chips work for months without being reported.

Nervisi contant thousands of axons, each carrying messages. Edel's chip his only 48 contact points, so the messages it picks up are externely crude.

We serveduy the chip may asset ampulers in guiding computer-controlled arms Annhar idea to connect an implement of the control of computer codes is explains that do complex things with projec codes is explains. These with training line of ammony do well processing ammony do well processing ammony do well processing tasked machine y by meeting tasked machine y by meeting may body parts for on larger has — Oncylas Bam .

"For the just man faileth seven broos and risech op again."

-Prove \$5 24 76



MP council (above 1960) is dearfed by com



Affoliation in the second state and the second state of the second

BREAST-FEEDING AND DUABETES

Bhasid feeding a bitry can protect if from diabates hit is the implication of a social Scandinavian popula ion study, which revealed this breast-field bacass are less likely to develop childboot diabates than broas

Physicians Knut Borch-Johnsen and Joern Merup, of Stato Marchiel Hespetal, Gentotic, Denmark, corelated nutrieng precluces and the incediment of ablates in Nor way and Swidten from 1938 to 1990.

In the Portice, for example, 00 pixote of line Scandnas von mothers breachaid ther bases. But in the Sodes what any 20 pircent del doubled among ther ofspring. And the relargence of breach feeding in more reach years has been to could be a consistened electric includiocal dialocity assumption to the second dialocity of the second dialocity of the second dialocity of the test is created by an ask-toproducing cells of the pairrese, protected the whish formness, protected the whish formness, protected the whish formness, protected the whish formness protected the whish formness protected the whish formness protected the second dialocity of the protect the local second dialocity of the protect the local second dialocity of the protect the local second dialocity of the method of the local dialocity of the protect the local second dialocity of the method dialocity of the local dialocity of the method dialocity of the local dialocity of the subble which dialocity of the local dialocity of the subble which dialocity of the local distinction dialocity of t

because to intrinune system isn't fully developed "

Dilibelias Banch-Johnen notes shortens lie span and causes bindhess and editey disease. Athough further studies have to be correct out in e says this one indicates that mother is milk might prevent debetes find since we know that matter s mik can protect the third against other infectious diseases, such as those of the respiratory tract, I would definitely recommend brissilending. Two For Methania

Wedom has built her house, she has heren out her seven

--- Proverbs 9 1

MALAYSIAN SEVEN

While seven is a special tumber in America, it holds even more significance in Astevas

Breakin is an inger nember auch in riskalar in Makyaan Didlucit in syn Jesanette Didlucit in syn Jesanette Didlucit in Statu Livrenstry Didlucit in Statu Didlucit in Statu Statut inger in diversion Refore planting, poopie in synthem seet in diversion Refore planting, poopie in synthem seet in diversion Refore a diversion kind a number solver in such a stratutant baset here an diversion break paraktaka disgree in bioloce at Benskey

These a fastwai on he seventh day of the seventh month, during which young gets with for a fuebond, its based on a legend of two lowers who ve been sepanited and come together only on that day

The number seven has optical agriduance in West em folkase too DeBouzak has discovered "Look at all of the lok- and tany takes with seven in them, seven dwarts seven brothers charged into seven brothers the little tailor who kills seven in one whack

Although her research locures on the hands prodomninance of the number-fee Definition is also and data Definitions is becomed by the data of the second data and of costan includes and of costan includes and that began while of the need. The Nomber Times in band second the the Amonca' is ready by Alan Durides charmen of Berbe Data of the Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data of Data data of Data of Data of Data of Data data of Data of Data of Data of Data of Data data of Data of Data of Data of Data of Data data of Data of Data of Data of Data of Data of Data data of Data of Data of Data of Data of Data data of Data of Data of Data of Data of Data of Data data of Data data of Data data of D

Right now DeBouasi is watking teven days a work on har material tasses named, incidentally for the seven planets known to the ancent Babytonians —Ptank Zowid

"Grow old in love from seven Miseven timos sovers" have often wested for Hell for ease from Heaven "



Moraphian Surgers IA coupling where number seven is mage

CONTINUUM



Abused cransmin Marchine Naction emong apacent Joan Hen

MURANY ARUSE

A group of pathologists has found the test physical evidence that women were bettered in the ancest works

Nanque Fouurit and her colleagues et the Medical College of Virginal have examined inote than 1,000 bodies taken from bunal grounds along the northern bodier of Chile

Five ancest cultarea intel in the analy, called the Azopa Valley over a 2,000-year peend Fisian commod about a third of those topies for born dasetse cances and office skateral condition showed in sitemap pedient from outputs to without

"Overall tensile excitated a significanty higher foquency of fractures "asyn Pouers' She faund that woman suffered 78 percent of all cromal fractures Smiller samples showed smiller percentors in 22 bodies from one culture sho sund that four times we sarry women as man had use fractures in 11 from an ther she found that about we times as many women act fractures.

The suggests that A20pa Walky women were victims of abuse. Focumt constitutes She doubte that bone dissage caused the breaks because it did not show up in her subposes

The trictings however may be unique to northiem Onler Patrologist Flank Soul who has examined numerous Mayten remains has found wery tote oxidence of any in junce at all in Central America.

In the Eastern Medilentnear I found far more helded fractures in mein than in women, actos br Lawrence Angel cuastor of physical anthropology at the Smithsonan instruction. "I auggest that there is a foll more abuse of women and childran in the present — —Dorgine Shim

God blassed the seventh day and senothed it because in it he rested from all his work."

-CADDIS 20

Seven occurs often in the Being as insymbol of completeness.—The sevent day of rest aften the creation—and let powers of mage have been anderees by generations of markbreather assessment on of a seventh son has the git of heading, and the seventh daughter of a seventh daughter has a seventh daughter has a seventh daughter kinass the mission daughter be a seventh daughter kinass the mission daughter be a seventh daughter be a seven

-Geothy Viaceat

QUIZ NO. 5

One of the possesses of science fiction is that should explore not only maginary works of atiens and futuretic technology but also new concepts about human scoctes and how people will represente new challenges and behavers

In the five stones described below, well-known sciencefiction writers have examined expects of human itractions that can be shown only in science fution stones. Can you identify the stones and their authors?

 In a work the is dwepopulated by people of low intelligence a handful of genuese tree dispersively to control the population explosion boffper all of human speaking boffper all of human

S. some man experies.



The asshor in executive 4 cars

the moon find an anriant that has been placed three by an elem contraition (only ago) When they distarts the artifact, it immediately sorted a signal into approach to allot an operation space to allot tai creations that the creatives loom Earth have achieved reacciliatif.

3 A male Ar Force estonext and a lemile photographer grapple with the errosonal and physical probleme of maleng love in orbit, under weightless conditions.

4 On a planet orbiting within a cluster of state, a small team of scientists labors to protect exitation from a periodic madries that afflicts the entire population

5 In a society where even multical creativity is calculatly controlled by the government one incredibly objected young man broaks the subs-and suffers the consequences --Ben Boxis

6/61 404 10821 10000 00542

Provide Control of Control of

Hits today knows or cares

- Karl Marcosco

-2 OMM

In these top schools experts see



a powertul me crocomputer sends out arms, octopusities to 30 computer ter-messis. At one of them, a student working on French Inicia herself viewing the image of a street in Montreal, by pushing a few bullons she can deade into Sive Extons phe candidate into which stops or musicant to peer-axis which day the com-puter matt share has need to date may take here to need. Additional and the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the data of the stop of the stop of the method stop of the stop of the method stop of the stop of the data of the stop of the stop of the data of the stop of the data of the stop of the stop of the data of the stop of the stop of the data of the stop of the stop of the stop of the data of the stop of the stop of the stop of the data of the stop of the stop of the stop of the data of the stop of the stop of the stop of the stop of the data of the stop of the stop of the stop of the stop of the data of the stop of the stop of the stop of the stop of the data of the stop of the stop of the stop of the stop of the data of the stop of the data of the stop of the data of the stop of the data of the stop of t of two reacting molecules and asks what substance will emerge "Formaldehyde," two students answer, simoel in us-son, "Ther's absolutely right," the teacher says, standing to put the formula on her board. In moderviel times society's privatal institution was the



Technology spawned by the Silicon Age will bring children a wide range of knowledge in subjects as diverse as ethics, architecture, and art



Church More recently it has been the facmetion Age, the center of Me-for people of all abos- a likely to be the school. The edinto every conceivable form from computer humanity's heritage of accumulated learn-

We'll been home based schools, more anvitte and religious schools more schools commissioner of och cation. Many arthropic he adds will contain "subschools" for stu-

According to Steven Kurtz, headmaster of Phillips Exeter Academy, inclustry will get Marrielt interested in improving the quality whole distincts," he says: "compacting to run the schools in a city like Wighta as an ex-

Normatter what the genre though, the primany mission of tomorrow's schools will be to teach students how to think

We will have to cleal with questions untoreseenble today and so we will need a broad-based eckastern " save Barrand Cople who can think putside their own areas of specialization. We must give people certain koy intelectual skile-analytical fanking, ontcel finnions the ability to make suboacrees. "What we need to do in achoots is to encourage kets to been interiore for taken

According to Peter Glasser an expert on thur D Little Inc. Artics adjustion will resome cases also be clobal. Tomorrow's world wil be international intricately internonnected via fiberopiac cables, satellite communications, teleconterenoing, and high speed lowel. Thus, the culture that tomor

We can't ive on an intend called Kannan or Messechusets " Glaser says "How cars

The Inchesiocles transforming society will transform teaching, too, Laboratory classes computer schere says Paul Salmon retred director of the National Association of

That into the on-screen text will be puzzes that give students statiant leeptrack, ackin LeRoy Hay Connectourity 1983 teacher of the year Students will also summon up w-

of information because in the mass-ecturaton style of the Industrial Age the teacher was alone," says Hay 'Vis technology improves the seacher will become a purch a

Ideals, Hay contends the new technol ogy, including salelites, computers, and solated rural or ghetto school ottering the the same teachers as the high-powered elte "Biotechnology, the Japanese lancusto-by used technology any school will be able to offer such courses," he says, "even if only one student is interested

Apportant to UCLA's Madeline Huster, no intelligence video and new theories of serving Nonithrigas Omy asked a patel webstations tomorrow's ideal traits. Using their nominations, we have produced a lat of 79 aducation system of the tuture

We began to comple our let resty this year of retional authorities, including Dr. Spock. College of Columbia University, and Milton Kopelman, principal of The Bronk High School of Science Because our experts are list contains 77 schools in includes aut a

The achaols on the list, moreover aren't necessarily better than these not included lar genes or type Nor can we guarantee that a specific student at one of these actods

close look at six sample institutions, each Hends what they found

John Kus trivers with "sumprisy genes." His three-year experiment in DNA maniputa ton-"The Mechanism of Transmission of immonant from Tarwan is not a research beclosest, not men an MT or Callech Ph.D. canciloade. Kub is a high-school student

But what a high school. Kup attends New exemplary of the magnet actions now pro-Verating nationwide Such schools, orga

The child workste at the constructor, above, at OWN

nized around specialities from finance to tornon languages are open to students living creatingly in demand magnet schools are

standout Every year 7 000 hopofuls take the

oldary of deferma black actived Stokely

What really makes US SENS MILLON KO. to debate and grueling interschool math

We even heard of wan sava Kuo in grafiliti covered

special ecuipment or facilities. What stuand academic "toughlove "My lavorne

It's a tartastic school because there are a lot of kids here who are really writing to ust by being a good student.

article a fading set of family photon But to

There was never enough lood. he comclains hitsely. We back to tell lives to get togg?"

newcomers actual to life in San Prancesto in 1979 in an old lour-story blue-shappon building with a sweeping vew of the bay In shades are students from 35 countries in Ching, the principal "and we give them a

in their own lan

guages Chinese Cambodian Laotan such class the bulleeveral ally it is the crity cardoma as well in a

By 1986, most network affiliate stations will broadcast stereo Unfortunately, most VCRs aren't wired to handle it But Tothiba's new M-5800 VHS is. It has stored capability in both record and play Plus 4 heads, 4-event/7-day programming and full-function wireless remote If you think it sounds good now.

you should hear it next year

Most of the Cambodian children hark ago the girl is still in shock. When these

Kabul was everything improving my says Ahmad, age seveneen from Mohani

Martin also soloen, is from Nicatabue

thing And what do I pay with?" She holds up that old American abindby, the check-

second language for

a nickel a dime a quarter a dollar bill

oredit card " she an-

can you do with the?

dents here at Newcomer, siya Ching, We special students can finner. Whith satisfies, otackusters will be leaders in the new clipt

This is a anobie place issue Atlance age



TOSHIBA

my mother wert tens. The gams at imposed up, we need type in the basicones " the mesots bias of help: addeed Nas severtieso. "Where discognituan hause "the rate late stability was to complem. There is so the perform your help the severties." But you perform you have a "bid severties" and a perform you have a "bid severties" and a perform you have a "bid severties" and a perform you have a severties and the performance of the severties and the severetie

Ecould be any group of high-school studonts. But these particular people attend Washington Perperatory High School in Los Angeles. Like the Newcomer School Webhington Prep is a specially institution, set up to deal with the civerently the will mask Ameri

Wenty-first century Washington is a school for disadvaninged students in and around the black comparate of Wents

A stor jepsie here in here in

Exostina to work, fuely Weahington Play offers special modular and special three instances and special special

loday even academically advanced sau-

detta mercihicologi Waalingen Freis olegi detta mercihicologi Waalingen Freis olegi description zwische Strometer Strometer onerty gewe Waitnegen Freis beschart St. (2005 description zwisch of an one et al.) gewet The annual number of exagementer op with an et 2005 has dropped to ausle och with over 4000 has dropped to ausle och with an et 2005 has dropped to ausle och with an et 2005 has dropped to ausle och with an et 2005 has dropped to ausle och with an et 2005 has dropped to ausle och with an et 2005 percent handbalangtion in a experiminately 300 percent handbalangtion in a specification of the of the offs stabilita schores And pertops disclation of the offs stabilita schores And pertops disclation and one offs and an et 2005 and an et 2005 disclation of the offs stabilita schores And pertops disclation and one offs and an et 2005 and an et 2005 disclation of the offs stabilita schores And pertops disclation and one for the offs schores offs and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and one offs and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 and an et 2005 and an et 2005 and an et 2005 disclation and an et 2005 an et

loshiba's CD player comes complete with rack system.

Loss desampling of impernances providing professional and lechalability arrang to people of all ages and economic groups. Financed in part by lossi businesses, its corporate propriosis include Apple 18th Howele-Packard Locheed and more than hope that the timing will arreinsite (more) worker throtoges and create a generate throtoges and create a generate and people with computer expertise.

A typical classriptim at the setted content effect for computers a cartiled publo-school lender and a computer specialel often loared by a company needs). Evening and weetend classis cate mostly to adult, and according to director Lang Lo dim. Iste attempon as isserived for kety-

Teacher Meleza Michaels, for me

leads an introductory computer class for children ages six to mme "What are some of the things a computer can do?" she sake the group "It can help solve migh probtems" says one boy "It can help you learn children alonge others

Most of trock off dets have papents with name comports. Mohetis says been more importanall of them trave learned to read. Two learned to read the these index is the path learney is more regimentation. The these historic travel is the regimentation of the re

At first it looks late ustanother aging oby athoof a fortnessike structure of each brick

Note only us a CD place standard souprement in familiati soutreading where 130, both the both C control solution in the control in the proof dual trains and Dotby "B and C NR. As well as AUMPA stands digital syst Property June Dotby "B and C NR. As well as AUMPA stands digital syst Property June Dotby "B and C NR. As well as AUMPA stands digital syst Property without solution integrated and and plant" it during the both the solution of Hobard graphic capacitary. All in a skeek giant top calaxiest Solution Systems and a standard based on the Data of solution solutions and an and an and an and an an and an an and an and solution solutions.

100 ware produced memory MH course can be areas for 20 30 000 to well-colliger thes 2 000% 2-0 TOSHIBA

and grante exowered emorg Bostonis colleges and museums inside the brown pare is peeling the floors are sculled naived by the clary particle of thousands of teel

We soon you see a hirt of something unmaal On an ant-class display of self portrais in the half—a ventable luminot heppon of faces—is a block-letter sign proclaiming. We assi the world But the sign is not un English calks/analosis (samp in Later

A 350 year legitory and perhaps the most lightly fractional school in America. Estilished by the Prutars to give than chaissen a classical humanetic education, the netions oldest achical is under by these same perceptes today Indeed, basic schools like Domais on wat in

INSTITUTE OF COMPUTER TECHNOL-

On Lime and Ticonderoga streets in Sunryvide. California, the homes are need and the lawris well kept. But this lazy intensection's soul—the institute of Computer Techmologi—befores to the information Age.

Although the translute is maintained High Tech High is 5 000 existence maintained High dergestren chickon some critizers, mo NBAs Coanto are end all from 8 are to to m. sto days a week taske months a year with no enteroided vacaators, this activatio fast countees with normer to 5 C Language PASCAL programming and examinations.

Set in the heart of Bilcon Valley the inst-



HOTION The danger, as in every era; was loaring your head

BY HARLAN ELLISON

The match the the the strength of the stren

encoment (18) March (18) the first as the Bitchin Loss and deal 14 element (16) March (16) the first as the Bitchin Loss and encoment (16) March (16) March (16) Harver (16) March (16) Mar

PAINTING BY TONY POBEHTS

empty with a gentie patience the exact soence of his reactors herbins as they pleasured themaskes with reactors and chemicalle and the Masks and needles and paring kneed and teams the could sit without movm for hours.

New Keiwaadin teer ter colse on a tooand yeen he financia Loochind uidel moi teer waa uulkoem to tion. Dul Gart waa room a starterd to service territoria and waar territoria and territoria and territoria awar territoria and territoria and territoria clabed to taker kees, territoria and territoria clabed to taker kees, territoria and and clabed to taker kees, territoria and territoria and and take territoria and and territoria and and the territoria and taken that he best awar that the black had alleged pleasare and territoria and and territoria.

He was not astramaci of his fear. And he wated with the utmost potence. There will no alternative

The pack came crashing through the forest and trom his pit he watched He are the hand of his brother Wanack eyes still open humano at the bait of the packs leader.

This flag, were gone apping swig the entries of transchers of the down saved 2006, plunging deepar into the forest to find him He had to believe all the offers were dead now. They would no token sent to the base. They would no token sent to the There had to be an escape route. Nowhere in the world was sale. Nowhere in this world

By now they had smaahed open his treesus mores and scattered his demonts killed his concubines, steadthead his matched teens of honass and partners. The thousand-year rule of the Brother Lords had ended.

There would be retribution when the peacents restared they could not rule them beives. When they called for their Lords to return.

Then he remembered what he had known amoment before there wate no more Lords The firty-what Brothest were meet now, nothing but meet. And the putleth streaded in a hole in the lonad.

Nationary and with the memorialise light of the ult most. There were any first last carne to eccepts. There were any first last part in the two ecceptions of the second second time. Ecception moved into the tweet it is called to the second second second second second second background second second second second second helps. If the tweet divideor more thanking helps. If the tweet societ is the second second second the tweet second second second second helps. If the tweet societ helps in the forw, the tweet societ helps in the second helps. If the tweet societ helps is the forw the tweet tweet second helps. If the tweet societ helps is the societ helps. If the tweet societ helps is the societ helps. If the tweet societ helps is the societ helps. If the tweet societ helps is the societ helps. If the tweet societ helps is the societ helps. If the tweet societ helps is the societ helps. If the tweet societ helps is the societ helps is the societ tweet helps is the societ tweet helps is the societ helps is the societ helps is the societ tweet helps is the societ helps is the societ helps is the societ tweet helps is the societ helps is the societ helps is the societ tweet helps is the societ helps is the societ helps is the societ tweet helps is the societ helps is the socie helps is thelps is the societ helps is the societ helps i



And so he burrowed deepor, he wolfool crouched in the damp hole his stringer arrest at the forest's shockwe ---weiling for he first unfrituneer properties deposite him.

He walled and walled, but they seemad to have returned by other roulas, salened to have bygassed him in the daknoss. For now lor a write, he was sale.

Then as down sont its first glow through the trees, he clawied out of the pit benetith the ground screpnig branches and claw lough mode his way into the city.

to the Experimental Buildings

The Protessor had survival bacable he had come up hom pasant stock. But even though to his been gented in relaxable position in the world of the Londs, he knew his place. Ha knew who was not he novel enche, and who was not And so he cowered in her as Garth of the Rod Hand levied the strong mit his food.

This solubled in the Probasion's eyes but the know he was in heatsoil in two a bray weepon, but it was in the herrol of the Look herad incover all has the know the mail a thing that could kill without dowing a heatson brain the source whom he had never brains are all without the had never herad source the works whom he had never many tables of the works whom he had never many the bray execution the had never might be some way he could conside the

Carlin parched, hip cocked on the edge of a low experiment shall parting the stringer directly into the Polassoch tool in the board interest and the Polassoch tool in the polar your tooloh experiments may at least polar tome search. The Polassoch tooled conlands, What could the Peol Herd want that he could nee?

"You will send the back one hundred years, and if you do not I will bern out hat your with eye, and then your right. And then "your enleg, and then your right, and then "Hit speke in a soft, streety youro. The dot main know he was sensue, he would do as he read

"But, my Lord," he stud, indicating the barries of time streak warparts," we have not yet particated the machine We can every yeu, only to one historical one and only to one peoplephical condensite to the Mesonic more specializably to the Lipper Lunsec Period approximately one hundred and flurty million were aso."

Last Garth studied the scientist with nerrowed eyes. "Common me this is not a trick old man, or be been and now."

ad his (V) der innere auf Anzeitenson intern in Therice "Wechten in verkisse wirder his chald be ein pre Loss, it is filte consamp subject of our studies is the histories wirder has not been stelle to repry your uncasion, Shi We have sert man back and we have brought them breakerbrough same might call is a mission of science.

And I call it useless for my purpose. He

B 7384 by The Killmanyers Corporation continues of the TD

The newborn's brain, registering every flash of color, caress, scent and other stimul vital to the

MAKING OF A MIND

BY KATHLEEN MCAULIFEE

Give me a chtid for the the has lead breach.

A servent of God or an abiding citizan or a juvenie deincueni Whai Ihe are now napidly continn-

is then that much of what he may become-his lectual growth far after tourscore years telents has nimeda his abilities-are devel everythms from his voual acuity to his compre-packed --insights into the developing brian

informater? And why do adults seem to lose. Datgado goes so far as to call the newborn this capacity as they gain more knowledge of "mindless" Although all the nerve cells a human

esses in plants and childran, others search the listos most of the newborn's actions



convolved passages of Another phenometrico

leaning centers in this

What underlies the child's raceptivity to now of an adult's brain Spanish neuroscientist Jose Lise a Zen kean this periodex has led sean- telect, barely functions. Surprisingly the lower tists down many paths of discovery Some re- brain stem the section that we have in common searchers are studying developmental proc- with replies and other primitive aremats do-



This changes disalizing in the object webs and normalize bits when the obtained gradient index that we have be there of gradient index that and the object of shocks in all developms to prove them. By the area a child is en upsarolic, the bits in it SO proceed of its adult weight, by the time help is in 16 30 proceed of all south weight. And by proceed of its adult, weight, by the time help is all all web of the bits that of the bits whild web of the bits the source.

How this is an erve cells manage to crparke homselves into something as complex as the human bian normans a mystery. But this much a certain As this integration and development proceeds, experimons can able the brants comactorism alkaling, even investible way.

To description the, Colin Bakemore, professor of physicity at Colorid University, tasked killers in an environment that had no torocontal knee. Subsequently, they was able to Saw only versical lines in the Education task based ther vision just before the experiment begins and busic that the linkers that an equal runder of cells that responded to each tops of line.

Why had the calls bacome blind to honzontal linos? By the end of the experiment, Bakemore discovered that many more cells in the animal' brains naponded to vertical lines than horozontal inces

As the human basis oversities, a similar ownorgang on processing the high of the first one of the similar arrays, during a lated in which directeding the similar basis of the similar the similar of the similar basis of the second processing the time set of the similar basis second processing the set of the similar basis of the Basis Calatory, processing a similar basis of the similar basis of the similar basis of the similar basis are similar basis of the similar basis of the similar basis and the similar basis of the similar basis of the similar basis of the similar basis of the similar basis in the similar basis of the similar basis of the similar basis of the similar basis of the similar basis in the similar basis of the similar basis of the similar basis in the similar basis of the similar basis of the similar basis of these of unless of the similar basis of the similar basis of these of unless of the similar basis of the similar basis of the similar basis of these of unless of the similar basis of these of unless of the similar basis of the sinter basis of the sinter basis of the sinter basis of th

The example- are well as the segme--base on intext is expected to can also influence to share abolines. The phonemes internal which for hardness are abared from the Japanete language and as might be expected, solids from their calable contracts. English works containing rand (hence the differing of cleaned flow in such as equilibrium) that apprevent suchs are uplier literally clear to Hospervents.

¹ Frank, collect other hand, second to end the stringset to between inperior hours. To their scritchely to pharames, issearches is such user charges on their their free endedsets as oflineert speech locards are grassented. If an erosaares, Alforacit, files heart rate inerosaares, Alforacit, the wheat rate inerosaares, Alforacit, the wheat rate is gail incomplete, tests of babies non-linguide backgrounds are varied as & Gainteenith is Sparket outbars, Kenyalis Kidgu epsaking with cean. area, and the United States all port to the same conclusion. Intents can clearly perceive phonemics present in any language.

The decovery their bobies can make ingalact detriction that dafts control caused quartering to earlier the syntax tags we board the second three tays of Dathasas threads the second second second second second second second threads of the support second second second their second second sec

"We antopated that inquistic sensitivity declines at publicity, as psychologists have commonly assumed. "Worker explans

The results were surprising Young addlascents could not make the distinction, nor could eightypericids four-year-olds, or twoyear-olds Finally Winter and Test discided to test infants. They decovered that the abit's to perceive forean othermets declines

It's probably fair to say that if you want bright kids, you should cuidle them a lot when they're bables because that increases the number of neural connectors?

starply by one year of age "Withe two monthdata from Einglain speaking: backgrounds could disarpush between the Hind yanremaes," Werker says "But by ten to twelve months of age, the babase were unable to make this distinction"

The coal part, according to Weiker Bie Determining of an lower months of aga. If independent shares in the sought Bound of the Sought Sought Bound to the state mended up to the special bie English Special parts of the special to the state mended up to the special to the state mended up to the special bies and an end to clady costness. We have been any an end to clady costness with there states and the states of the special bies and an end to clady costness. We have been any an end to clady costness the terminant of the states of the special bies and an end to clady costness. We can be and an end to clady costness the terminant of the states of the special costness the special bies and the special bies and the states of the special bies that there impact

Even abnef introduction to language during the sensitive period can permanently and the rule period bar of the sensitive and Toos tested English speaking adults who could not speak or understand a word of Hind, although they had been exceed to this at sets. the language for the test year or two of the They found that these adults had a major ackantage in learning Hindi compared with English-speaking adults who listiked such early exposure

Werker and Toes's studies show that here as an advantage in learning language within the fast year of the But when it corners to learning association space another study has invested some starting include. Adults dotually master a second language more osswithin school-age childron do

For too years Catterne Bros of the Husvertilisation Broot of Elucions, subject Amoreans who were learning Durit for the interme while large in Halland. Which you control for such factors as access to notwoseetens and the didy exposer therein to the imgrange. Show any, if adds a capane a large locability and olde of gammer more galacting than children do large data in April and the subject to all as good all children bear meets burd to be all as good all children bear meets burd to be all as good all children bear meets burd to be all as good all children bear and the subject bear children bear an advention missionities the nothers.

Denously not all earning stops when the servative peerd comes to a distin The abservation has ind some researchairs to generative perportance of early extenences What would happen for avangle of a child den not have a single would of any language until after one year of app² Would the processity in speeks be instaled feaewer? To could tate response to language make us the deto?

Because of the unified instance of painterming such an experiment on a chick we may nexe instantions can be glashed instaanimal studies of how early deprivation atfacts the development of social between

In An Outsmothyse Signification of the Control of the Control association that the child is psychologically the bitwor of the annual that the works of the first years are of parameterism in montance for the whole softeaguent development - Ar the University of Wescense Premais Laboratory the ponset and the soft of the test on our closest living misthew—the themses marking

"Dur expensions indicato that there is a critical period completer between the third and such month of IIA, will be Hatdwei, during which social dephilation, partooaby deprivation of the company of [See monkaya] paeta, intwensibly blights the anmats capacity for social adjustment."

When there returned to a colory in when here was anyoe operating for interacting with other annuals, the experiments more lenge memory with them, such pursiting, and compatible. Most agaits and for the group of the transition is evalue features for parameters and the second section of the parameters of the second section of the second second second second second the second sec glastiad four year-olds can still be helped to lead normal heppy lives. To satiabilitate the children, the leadness in the project provide them with the kind of intrinate attention that is ladering at home.

Primagia ana di the Hartsue docentenes adologi gilo en ying program sa Lacaga adologi gilo en ying program sa Lacaga wapateni. Una Hartsue Sund her vera a tito do caracteriza para a lange and barra her adologi kan ange an

If chasten and in exposed to possible accal shadows until sobrective howard, this progress is poor Like ally complex behator humas socialization requires an elabotato series of learning steps. So by addisacorror the tearinger With mission and an many key social experiences as a child has a tomeredous hendrated to devicome

Researchers are lending that each states

c) like domands offerent innois of comparison costs therm sphere share that is using ponode quart. When a baby is from it has to do be a trings at the same time. Says backtering band fibers of Brighards Open University. These that it has to survive state baby the affective applications which a conduand than hally analy. And is not unreply the case that everything the billing Oben is as measturements of while more one the addition.

For example, the ecompretex which may able the body trackin, and algorithms/ term of character (Three's a branchord per recessing)—The off-mark body may consider the sound shalls become recessing—The off-mark body to found in the body to work the found in the body to work the found in the body the body to and in the body three distribution and the body to body the body mark (Theo body See the body mark). The body see the body mark (Theo body See the body mark) and the body ecology to body the body to body how to do certain bings at certain times during development

During the counte of a service systems is development several sentence perioditic orour in the case of human values for leastple, depth paraghon seauly ormogroup by how months of age and after that remems instruey assiste. But index the first for yards of the hardware the additional of values actiing that prices as to see the development for an in many development are ordered. Find there is many development are ordered in the first or many development are ordered.

cause the process to go were if an example a stopping loci at level acoived by a othalics—induced and an exploring that other lock is a consistent of the state of the regional part. This concident is hown as a level of the state of the state of the state of the molegoin diversities. This strend is state of the the state of the the state can be been the signature of the state of the molegoines. If the state of the state is a level to molegoine the state of the state o

Literacies please, the nervous spletmin, is its receiption, hereby platels bill it quely softice into a sign card—one that here bade subged by experimenta, July which investorycal anotta set the moli on of known. Sum according to the CoshyDillon, a professor di ophthaliane optics at the University of Mancheater Institute of Soerboa and Solrelox in Excland.

Monity with collecgue Gary Perry Contybion is used of power adverty in the visual portico of all gape maned advert normal light constances. To mostly growth, restault used is synthesized tabular, a protein visit for form ing and manitarianing nerve control-toris. The researchers found that labeling pockcoon in the visual control result.



day 13 which marks the enset of the sensitive period for visual learning. It concades with the moment whon the amma inscrepanta is eyes. At that time, tubulin production solars, indicating a mailin growth activity.

Conty-billion and Peny bund that the safe weak contex-continues to grow for the next week and then doclines. By the end of the or ficel penod, when the pup is roughly the weaks old tabule production drops to the level attanet before the even opam.

To Comip-Diton the surplus of tabulan at the begarning of the criterial period and its subsequant outback have profound implceitors. Threases that an uncommonly large number of netwo conferences can exist at the peek of the ontool period. But only assist flackson of them will be marked at the end "the stays. Bo the question of course is which mere connections will be lace?"

If CroNy-Dillon is correct, expensional probably stabilizes those connections most, often used during the sanistive period. "So by definition" he reas, "what remains is most, tritical for survival."

Control-Dillons work elaborates on a traory Sound neurophyseologies Ramon Y Ca. 31 adiatanceo is the turn of the century According to this view which has been gaining truckel a location on incore times, brain development issemblas instanti selection Just so the forces of induced selection ensure the survival of the fitteet is of a similar forces preserve the most available are ensure The beauty of this model is that it could explain why the brain is as explorenting algolich bits mendetes surrounding, just able most patient encoder of the flowers have patients. The served organized the flowers have patients the testing encoders and odors we paraene beam may here let the encoders and the served county of the developing mend.

There is also a certain economic appeal to the outlook. Why, for example, should Japanese adults leep active a result cross fract permits the distinction between / and if sounds when hether of hese leguado concontrol is (object in their networe social?)

He another occurrence adversage of the heavy in their location departs the nature can logal containing all intrackies with terms on heavy. The second answer of general meatings and the second answer of general meatings and the second answer of the second answer the only intere accurrence and the second answer the only intere accurrence and the second answer the only interest and the second answer the defaulty of strings to income even the defaulty of strings to income even the second accurrence and on the wetrag process much DNA.

This visit discrepancy between genes and connectons, acceleding to Balanmere can be overcome by encoding in the DNA the specifications for a "rough beam". Every fining gets roughly laid down in place Balanmere area Buttle averno of be outro nervous system is far too rich and diffuse. So the brain evenconnects and then uses a selection process to fine tune the average."

The beam of an expin-month-old human bias as actually antimend to have two to here times more noive oalls iften an adult hand one auto blove brit three to a mosave daalh of urhisensery tren cells, a process that continues threugh early officihad and then beels off Presumably manymice connections tail lail in to salection process that core baset of the salection process - and coreship a small part of the salection.

According to billiaintosa, misry reusia (ocular terman in a toloco bul cases to laudich no says. That is many us remarks to service the connectore you seen in the acut basin as inclinacional. The time when acuts to an besitether do not all probably waves to dilatent parts of the control ordinal-acut sould controls with the strating products would controls with the strating products many acuts - to the strating products - work strating an strating products - work -

This doesn't mean however that new crcust certifycew. There appears to be after turing of perception connecting with three developmental events. And is the brain becomers a firer sever filtering out all but all infed amount of servicing mouth at three per termore information annexes to channel.

"Studies indicate that as many as hity percent of waty young children recail things in children recail things in

The Proof.

100 new car shoppers^{*} compared Renault Encore to Ford Escort, 79 chose Renault superior overall.

	Renault Encore S 1.7 litre	Driving Base 77	Confect 65	Constant/ Convenience 73	tateriat 72	Exterior 82	Overall Superiority 79
	Ford Escort L 1.9 litre	23	35	27	28	18	21

Encore continues its winning ways in 1986 with **35** MPG CITY,¹ that's better than Excort. New options, toc: Accusourd by Jensen, a premium 6-speaker system and tilt steering wheel. America's best small car protection—5 years or 50,000 miles, Plus free required maintenance, parts, and labor; you pay only for fluids' See your.

5/50 ms Renault dealer for test details. Drive an Encore yourself and let European technology Built in America prove its promise to you.



Conserved to the second s



Scientific techniques expese layer efter layer of history beneath e pointing's surface







analysis, however, revealed that the base Details from the ten and bottom row. and at far right, top row.



about darine love. Although his tonate may never unvel the was produced by a cost mysteries of Primawa, new of varialish applied technology allowa restorers to to the work during the sincheenth century. Irrelation of the century irrelation of the century. Unberto Baldini, of Flor-emor's Uff2: Galenc and hit restored painting are shown directly above, Besteraton use carrent, later. and other sophisticated equip-

map of the painting's understructure liarge photo, previous page). This indicated deforms port-its warping had actually





Photographic onlargement of Prevalent's face (left) showed the biomshes, cracks, and fainque called surface skirterano. streams of light are shot at vary This further illuminates deform tios X rays of Pranavora (co possile page, top right/basig to light the palmasary phases of the panengis beth. They are then digitized to be understood by computers. Developed for surveying distant planets, this image-enhancement process, when applied to art, can detect hidden underpainting The mage eye of infrared reflectorogy reveals previous attempts to restore Mercury (opposite pige, bollom right) and the Graces' entwined hands (di-reetly above). In this technicum mored this reflect of varia-




tions in the transparency of di-torent chrometic malerials. The special TV camera and transspecial TV compete and time-formed into a visible image on a high essolution monitor. Like X says, intrared reflections can re-vessil the charges a pointer made—fogues, redrawn or eliminated—and like X mpt, m-Beclology can uncover a forg-er's mischiel. It can also identify the stamp of consists

Ninety percent of the restor-er's work is undoing the castakes of the pest, says Balani Enrades the marks of centurios the tormented and contradiotory succession of acohene trends-from tig leaves over Michelangelo's midea in The Last Axigment to duling costs of variash. The brown haze masieng Le Primavera, for ex-ample, was the result of a cost of varnish applied in the nine-teenth century. Modern resto-ration techniques have cleared under a bright blue sky. A marky piant spopes.





Many Florentine works have had pest restorations uncovared Pantings, souktares, and to indoctary A Senary inde-lograph of Rephan's Madama dol 7npavate (in webie light, above, and under X my small photo at right) decloses that two setenhed lighten has been ob-temated by a later artist. The version on your for four costs res deputs a single figure in the lower right-hand conser-the seven-year-old St. John A do tail of the Impannets (large photo at left], photographed up identifies retouchings and the

Restorers regard artworks as living, comm nicating organisms. They don't try to metch the artist's work with touch -up paint but fill in holes with strips of the same hue. From a dis-

tunce, the strips are Utimotaly activation of the service of anisot help in presenting up of anisot help in presenter of the service spicuous, hut close-

hidden or lost stroken. Taxing patience, and improviaation come into play when the picture a treated. Then exploration de solf prevails as an art CO

of a mind

CONTINUED FROM PAGE LT

pictures," says bacchamed Rose. And by the time were about four or two we tand to lose our edeec (photographic) memory and develop sequential methods of recall."

To Proce, who is studying the next works in memoharisms that under to learning these the resonances process may have an uniquity late man capacitable divergina to coll of between that bases in each units that to all the Weat that bases in each units and to all the Weat that bases in each units and to all the Weat that bases in each units and to all the Weat that bases in each units and to all the Weat that bases in each units and to all the Weat that bases in each units and the Weat that bases the each units and the Weat that bases the each units and the Weat that bases the each units and the Weat the Weat and the StateWeat

The function matchinger A. P. Lunshada a patient curred with such a matching-the patient curred with such a matching-the patient curred with such a matching to the such of the second such as the patient of the second such as the such as poly while lettering to instructions so inary associates for such work such as that such with lettering to instructions and the such that the such as a matching the such as the such as the time such also than them. Here easys is that as the such as the suc

you must learn what to forget

Some components of the bain, however must reten their plast on violationsotherwise pollution instrume would be pos-

able, says neurocentrist Bill Greenough, of the Driversity of Ilmos, at Ubbine Criste point Which the adult there correct greenate rear bean cells. Greenough has uncovered evidence that it does commune to generate new nerve connections But as the brain legal, the rate of which it produces these connections allows.

If the young brain can be lettered to a staing appointing shocks in all directions, free the adult brain a more akin to a tree, which growth as contined percently to tracking in goins. If the matues team, "Classicagi style "network commectation appoint" to pop up remenancely projective where they're needed?

Early expenses this possibility and down on which all subsequer invaviage massibility build. That we yris availaad the possibility of the second second of personal to a second second second second second personal second second second second second personal second from second second second from second second second from second second second from second second from second from second second from from second second from from second second from from second second from from from second from fr

Grienrough acknowledges frait the signtain ant perfect revertientians, it works to an advertinge because you centrolid on a workdly remous system. You ve got binder who your mother is, and you've got to have perceptual skills, the applane. These and then yours of barrent barve to bit quickly or



all further development would halt?"

Can these neights into the developing brain help educations to device new strateows for leaching?

Write a very long way from being able to apply the work of insurboliogists to what choic faced bachers are trying to do," says Open University's Rosel

But he can use the couple calls of a low of the couple of

"Altraugh early learning hirds to over adaptive the granicas of bitro expension, mend dowlightent never creases Record autors index to an realizate abilities contrave to separat with into or eqnitive provided the bitro to the rein related or diseased Most on-casil (a maintaining) most ability or ascentral to Sincercupit relating some and biarrig on two checkings. In the same dates is the can that about the small contion-imply most than about the small contion and the sincer on the small con-

As long as we don't solate ourselves as we give clube, one very important type of mental tactivity mey even improve Called crystaleoid institutione the ability atoms us to draw on the store of sociumatacid lenses estige to provide informatia adultions to complicates problems Analyzing compliant policity pictomer problems Analyzing compliant policity estige to provide informatia adultions to complicates problems Analyzing compliant policity estimation and a state pictors for an ending to an ending consistence information in tellinguing the state of the

There is a danger in belowing that be causal thabitants entotmicablecundules are capable established alary in the all excelat capabilities are estimated, for "helpforce a not sometimizing steer that can be primed down web an LQ test fee butterflees on a shard interpting between internal processes and neutrent becaus."

To be used investigation of the second secon

It is said that the ability to hatmin later life depends on the retainton of childles intocance. "This old saw," master CecklyDelion, "could have a neurological basis." OO

CILINA

BEGIN TODAY TO BECOME A WOMAN OF TOMORROW



d by it. Rorely does a book choller ader to cho of future are ex- home ond r slored and explained in this landmark be ek by Ter w Keelon, president of Omni m dy being hailed as the "i ence will affect women's concerns (health, sex, woman of tomorrow, you have to begin today

uture: you con influence if-or be over- men, children, coreers, families, homes) as well nge a revealing survey of women's of when Now coreers in spone test-tube hobies a ner revolutionory tr orrow is f lied with possibilities. If ogazine. Al- obout the future and women's role in it way by being halled as the "megalrends for to yourself and your children to learn how warrien ten," here is an optimistic view of the ways sci-will use technology to shape that future. To be a

AVAILABLE WHEREVER BOOKS ARE SOLD -ST. MARTIN'S/MAREK



FICTION Thase timenders have a shot at making historyif they survive it **UNDER SIEGE**

BY GEORGE R R MARTIN

Vargon, Colonel stantly as they ran whiched pharbams sign The world was snow and wind and bitter were running to ac swifty. Again it was happening F. A. Jägerhorn was burning cold The writer I these misty children of legan. What was liquid everything that Antonian sea fad frozen hard snow and wind Pethaps Gryger? Cold, he knew was not dark and handaround Helsink, and in the They could be taught to somehow colder than the some polished and poliby gro 4 held the six s- attack the Russians. He is ce colder transfer wind it to, an anaposal with an and chades of the greet smiled severing the Liquid oxygen was bitter enstocratis control Ja-Informers called Svea- fance of the snow basets and white and it steemed gethorn had important borg The wind was a unleashed upon the enknie drawn from a sheeth e my it was a strange wild know it as centernly as he had influential relatives, dice it out through Art I throught Colonal Bengt | know his own name ionons uniform chefed al Artizinen had never been his checks, broughtlears at magnaget man be to has even and troze fore but of late his mind howled around the towering, gray privite walk face into the wind agen forced its way through welcoming the chill the doors and cracks and inumbrig cold He wanted invaded his mind insted "The Pussans do amuated itself every- into the heart of hen and inght, he was point med. where Out upon the Iro- I feece the persons that | surely He had proved it | an Sveeborg mounts ten shreked at the Russian to be rumb The ood had meeting ardiery and sent parts of amad even the turbulent show from the defas nat- see repisel and seen too, very backy as they all had tone insi certainty, his inming and swring over the inew letitoprogram the tur- of late As always, Anto- estence Japanion smbears ghosty annals Artionen He openad ha against the others, hope how you come by the mal aspacie wearing test, mouth exhibited a long leasily stupidly Ha was telligence, Calonal Antone shape and than any plume of breach that rose I not the knew that he had I brien? The second

thoughts. He wondered anyoph what form they would But came came in the Japphon had brought 9:1/1207 Anttonen furned his The other officers were

the high temparts | other changing con- | from his reddened | knew also be must and They were creatures as inaled a draft of hight ar i each word further undermaileable as Antonian's I that went down like liquid i mined his status, further damaged his career

take next and where they wake of that thought it on once again Colonel and flowed He knew f, connectors, Japarhorn Aritzman haned from Carl Old Consistent the ramparts. He walked commandiant of Svea his second as if it pauld wheet of recome

The reports are acount the demons that work Antipres had in not outnumber up. They have benely forty muns. Gronstedt stemed

The meeting had gong shocked by Antonen's

PAINTING BY RENÉ MAGBITTE

That was the question Bengt Antionen could never answer "Tiknow," he seed

Jacentum raties the papers in his hand My own intelligence comes from Lieutenant cens to relaible reports of energy plans.

He looked to Vice Adminal Cronstedt "I subtrait an that this information is a good deal more reliable than Colonel Antionen's restenous certaintee According to Klick the Russers outrumber us already, and Ganeral Suchtelon will soon be receiving sufficient reinforcements to enable him to wurch a meor assout Furthermore thru hous a trenidable amount of artillery on

Cronstect was noticing, agroong. Even then Antipoen could not be plent. Sat" ha insisted "Klick's reports must be discounted The man carnot be flusted Ether

Cronstedt froened "That is a grave charge, Colonel

"He is a tool and a demod Amela trator?" Jagement bristled at that, and Cronstedt and a number of surror officers looked planty initiat "Colonel," the commandant said. Th is well known that Colorel Jagomorn has relatives in the Anala League Your commerrs are offersive. Our situation hato is transes. You will offer an apploay at once

an awkward apology Jagerhorn accepted

Constant went back to the parents "Very persuasive," he said, "and very slarming it place " Planly his mind was made up it was to staft meetings determined to be aroumspect and politic, and no sooner would be wasdom, he denied obvious facts, con armed in written reports from reftable memory side

"No se he wed "libert of you deregard somo courterollonsivo. We have nothing to ionr if we can hold out until the ice melts Once the realiance are open, Swoden will

When Administ Cronsterdifs bace was drawn and weary, an old marts table. How many your proamentative attitude, and I am guild spring of lansive. The facts are plean. Our defrours an fewerd and the ice makes out arrays are being routed---

We know that only from the newsnanew 31 0924

out. "French and Russian papers. Such news

Credstell's patience was ratiousled "Quint!" he said, slepping the table with an open pairs "I have had enough of your intransigianoa, Colonel Antionen 1 tespect your tuhaw when I Nexus your opinion, I shall

"boerd on smiled "If I may proceed?"

cold writer wind. It was no wonder Artionen had bet driven to the cold solitude of the bet-

By the time he returned to his quarters, fund Dataness was failing, he knew Over and Finland. And over America, he focusht He get heavily on his cut, crading his head ri ha hando America America what madness was that what possible difference.

6He stared into the mirror, the features familiar and orkriv, frighteningly strange. of satisfaction in his alian, troubling image ?

could the strungle between Sweden and

alop the modest dresser. Behind the basin was the mator he used for shewing, shortly vicipable. As he dred his big, both hands. slightly surrison checks, a square chin. He had grown resigned to the way he looked. Lintil reparativ, he sparterly gave his appear age that was alien and troubling. Such vanty was ack, unmanly another sign of madmeror. He lay himself down with a will

For long memories he could not sleep

Fargine and young danced against hefams he did not recognize, walls of polietied metal great storms of tre. men and women unearity and turned in his slopp.

ity in a still quest empty world beyond service steion For a second an hour I do not know where I am and I am atract And then the knowledge comes to melliteturning. I am rewent to return, but I must, must I wint the swoot, clean nurty of its and show the limen of Banot's face But it tacks, tacks wailing It tacks, factes, and then is cone

I serve motion, a straing all around me as nostrils, soit the tubes out of my bleeding mouth. When the fluid fails below my cons. I hear a gurging, a greedy sucking sound

Above the top of my tank is costed by a thin ebony him that has during to the colshed metal. I can see my selection. I'm a stiring sight nostri haits aquiver on my a swollon greenith turter Buch a handroten teeth fresh new moreons pushing up among them like sharpened stakes mailed of yellow toacistocils. I wait for release. The tank is too damned small is coftin i ambur wel alway and the last to a paloable weep's upon me They do not like me What if they sat know me in here to sufficients and de?

Finally the life and the potenties are there Rafad and Sim Big. strapping failows, bland while colossi with flags sown focus on their faces. My eyes are not so cood after a result. I know the dark one is Rale. faces. I force my hands to greap the tank's sides. The metal feals strange the motion is spond "What took you so long?" I ask

Ememory' stay Birn 'Rollins' Hole a testy isoanc sort and he doesn't like me To learn more 1 would have to ask cuestion after cuestion. I don't have the strength I concentrate instead on pulling myself to a sting position. The room is awaith with a briefe blue-white fluorescent light. My even water alter so long in derkness. Maybe the



The computer is a bridge between abstract and concrete, intellect and emotions, child and adult. says this father of artificial-intelligence research

NTERVIEW

EMOUR

vent of his life in the signales it wis in those African carros that he discovered his first passion. automobile gears Crawing under the relationships of the rotating large projes, and how they were affected by the smaller oners It was Papert's first expenience with numbers and mathematics similarly fasonated with logic and computer that was inspired in

he son of a South Alncan wile permitted to attend logic semmers at the university of study philosophy at the University of Wheatersrand but he scon he continued to be preoccupied of any soil was in 1945 when them worall I really any computers. "I got into a debate about the passally of mechanical finking ' he recals, 'and built a life

PHOTOGRAPH BY BILL PIERCE



 The child is not working on number but an samething much more elemental, like order or even inclusion or nearness. These structures, which I have called microworks, The later second a second decrement on the later another second decrement on table an machements of classification University and the later of the later of the later of the later of another the later of the later of the later of a critical in the later of sectors the later of sectors the later of the later of

Bidly Playerin a gardisac dinubrenti isa and aduation in the Neosetherin in status of Echnology and logating with Neotrans and aduation in the Neosether with Neotrans and the Neosether and Neosether in the organized laterative making is operative to the Neosether and Neosether Incomparison and Neosether and Neosether Incomparison and Neosether and Neosether Neoseth (deven the comparison feet) Neoseth (deven the comparison feet) Neoseth (deven the comparison feet) Neoseth (deven the comparison feet)

Paper instead that Paper was tably type to othe same they take it research are were after to transitive moder of training date mancheneracheal oriented training date mancheneracheal oriented training date mancheneracheal oriented training date mancheneracheal oriented trainment of was attaca comparises. But Paper issue the computer zero apertor model for user to know attaca comparises But Paper issue the computer zero apertor model for aget s cleas work (gravic blockmodel the baset or theorem to the second train or computer instead or compared to com-

Designed as beingn intellectual environments where chickno can think creatively and barn and test floor horses madeworks are to Reper the keys to exbuation, cash Regar. Report believe than all ferming, you are essentially concerning upunkal whintils percess you can understand the considered of baster world.

The electronic land of the Logo Turtle is Papert's most famous microworld. The Tur-

So a trongular inspatial baux that he calls in cybernate armal that costs which that cograve microarched that bodgs enrormment. The Hat collates han being pool is program and good birth ways. Chicken is program and good birth ways. Chicken the ture leaves a tacker on the video deplay termail with the Logo Turte is either on class anything from sparses and erclas to control and term.

Liss Particle of the risk is gats the Turbe makes of data in this is gats the Turbe makes of the risk of the turbe of the turbe of the risk of the turbe of the turbe of the risk of the turbe of the turbe of turbe of turbe of turbe of turbe decays in white The table of turbe decays in white The table of turbe decays in white The table of turbe applied decays of the type of turbe men in balays activities it gats in the topcease dividion.

Persearch in the Artificial intelligation Labo in the late Sinks in a the Scholing III 970 of the Loop group. With obteques that the lab and elsewhere Paperi Kamily put logetter the laboration and country of computing the data shart through the Laboration computing the data shart through the Laboration threads to chaining change of their the allowed to paper laborational taxopass their comways the needed of bodies yield in a state the removement of basis and physics their comways the needed of bodies with the masking.

These these basis of docs (cold on the introlbasis of the second docs (cold on the introltion) accounted where accounts in Annue to the the land with in whice both of a 1 have with the the booght of a cold on the account of the second docs and the second docs and the second and the land of the second docs and the second docs may be accounted as a second docs and the the second docs and account docs and the second docs and the second docs and the second docs and the docs and account docs and the second docs and account docs and the second docs and the docs and account docs and the second docs and account in the second docs and the second docs and docs and the second docs and the second docs and docs and account docs and the second docs and docs and docs and the second docs and the docs and docs and the second docs and the docs and docs and the second docs and the docs and docs and the second docs and the docs and docs and the second docs and the docs and docs and the docs and the docs and docs and docs and the docs and the docs and docs and docs and the docs and the docs and docs and docs and docs and the docs and the docs and docs and docs and the docs and docs and docs and docs and docs and docs and the docs and docs and

For Schulz olugit up with Papert while the scientist was rushing to MT appontments, tying around the bait Coast, and peuting at his Bostion apartment

Ones: How did your encounter with Proget envolutionize your thinking?

Project when I mer Pager my passion to understanding malinemials: carrie together with my dataset to know how the mind works and to note a theory of initiagence. Proget same tomath to say correcting both about the nature of initiation and initiation amental to prisophy—and at the same time discuss how initiation with the same time discuss how initiations.

100 CMN1

"Light my Lucky."

Warning: The Surgeon General Hes Decermined That Cigaretta Smoking is Dangerous to Your Heelth

ensities. This is assisting, and if's an aspect of Plaget that is totally unapproceded by the American followers. This years this is purious a psychologist incluse is a philosopher and opsizamologist incluses involves involves the processing and under the desertable mathematical issues and don't think thy are important.

The second secon

hereic, and not only wise Proget being the here but iso was the child! That he brought children into a dotate about philosophical guies operad my wyes. Lots of image cause together A montheblers hat it doesn Proget as the sincluse theoret of what children and do and subden/ there was into participation wash restricting but was promoting the child to a childrocher.

Papert All these moreovorks are netwoly occurring. Pagel cich's revent the order structure, he noticed that chicken had all

and over, they could place detects in a symme, and specie bables (d) the in Raiobins time. I was theiring the involution induction and a shift of the menutal is paper analysis of the shift of any of a metowork is be invented in could in cour in the natural blockopment of habitars are legance—as the ordinary and organic a compatible during the interface and an accessible during the interface with a becatare it moves as the method in black the interface of the interface and the interface of the interface.

One What was the mathematical concept behand the 3 mile?

Pagent in the instany of genomery: build takes the port to be the instance like with these nefer magnitude nor cold single of the second single second single of the description of the second single second single descriptions and makes the based of the description and the second single second optimizing the second single second single descriptions and single second single second second single second single second single second descriptions and the based the second single second description second single second single second descriptions and the second single second single second descriptions and the second single second single second descriptions and the second second single second descriptions and the second second secon

Gray Walter an English cybernetcet once mode a mechanical locities. For Walter this Inclusion with a totally compariment kills can be that moved accound the toom. When can be that moved accound the toom when can be and took to the place to buyle betting and to the place to buyle the top to a contraine encape the that place to buyle betting torms behaver. If we are instact, by butter mathetic contrainer, Achiel can grad acmathetic contrainer. Achiel can grad action of the set of the set of the set of the mathetic contrainers in side and index the mathetic contrainers in side action of the mathetic contrainers in side action of the mathetic contrainers in side actions and mathetic contrainers in side actions the mathetic contrainers in side actions the mathetic contrainers in side actions the mathetic contrainers in the set of the side contrainers why in a first the contrainers actions the mathetic contrainers actions and the side contrainers actions the side contrainers actions actions and the side contrainers actions actions actions actions and the side contrainers actions acti

Conv Children have made very protouted discoversite with Logs, such as their even personal discovery of the number area personal discovery of the number area personal discovery of the number area of indiscoversity and the such area of discoversity with a Spirate and area of the personal speed. A spirate text area to prove a speed of A spirate text area to prove the spirate and the spirate area of the person text and the spirate area of the person text and the spirate area of the spirate area of the spirate area of the spirate and the spirate area of the spirat

The gril became very excited about that 58 minis uncertive weekloot that betrarding still was moving with a certain speed mamely speed zero. This means that zero is a number all this one hundred and regative san ane-numbers. Disclemathemicans did not, know ideout zero. Hindu mathemicans discovered it isometime later. What does it means to discover zero? This capteriance of then using a symbolic circle to represent it Onew. Why is the Turtle microworld a safer environment for learning than a staditional school studien?

Part & Reining challence instances allows the instances of the second s

Discovered it isometime liker Weat does it. Unres Can a computer functioning whin that mean to discover zero? The expensione of standard system change it? the of isows free was correcting decore. Piboet Lots divide like an invalidentiacs upon

ONLY BANK TAR.

Land Lotter in consents in FC wated

Lights & 100's.

Come Are you creating their improvedsity? Papert: Dire potential improved in incluses a potential Turtle that walks around and heas atemene (lower). If the had to estimate and anexytee it through a mass so this leads into control theory. Children tubil modentimes out of the constitution in a Lego. We then interface these Lego bay with the computer is so that they comoved these physical objects with the computer.

Another fiscilitating microworld is color What makes color interesting is the so-called threa-color heavy. This is they take that them are threa primary colors chosen is that by mixing them you can produce almost every after color. The mathematics of color mixing fourther on very deep imathematics in does in a certrained costner.

missteroid very acaily. The idea is for children to heard options in a mathematical way.

Oren: The concept of biending would seen to apply to learning generally in its more creative aspects.

Papert Conserve has an an another that a first oblight is to device the server has an another than a server has a device of an ary our before that the server has a momentum entering that they first is de memory entered to the server has a constraint of the server has a server has a server the server has a server

One of the workt things about solved is that a forces you to do forings increa platforular way. It's the taking abilitational placeture and making them write with the right hand it not just here you don't do't very well but that it does this of harm to you. Schools also wrongly separate the abilitation from the conceptual and so destroy the diming force of internal motivation.

Greek Would you explain your notion of the significance of objects in thirking?

Papert Tachanally, funking mains working with abstact notions. That is fundamentally woog. The concerse object is a main important componential thinking than since ograzed. Eclasters talk about going from the period to keep the concrete with you—if is a steppon acron to a abstract thicking that also

If notify operation together like in the cust owner, we can accuss our control of the perturp conwer, we can accuss our control of the perturp conwhich the theorem for the trags you be into the control of the trags of the perturbation of the perturbation of the trags of the perturbation perturbation of the perturbation of the perturbation perturbation of the perturbation of the perturbation of the transmission of the perturbation of the p

We have lots of exempter of how a computer enables one to animate in a very personal concrete way what looked like an abstract idee. For exempte, with the Turke children can obpute vary early some ideals as come

Here engine it sin a vary abstract thing to down two lines meeting and put the least of carved thing between them. This is making place for most childran, but when you have an object on the screen that is charging detection. De angle through which it turtle is a waty immaciate advertabile work.

Genes is free on spar when chalken begin becomes the second of the second of the people in the second chalken begins the develoption of the second chalken becomes the second becomes the second chalken becomes the second becomes of the second chalken becomes demonstrated becomes an employee the second becomes of the second chalken becomes demonstrated becomes and the second demonstrate

 If d seen Plaget as the structural theorist of what children can't do, and suddenly there was the person who wasn't restricting but was promoting the child to a philosopher?

the concrete configural personal and what you might call abstract. Since this play goes on all the arris, we shouldn'try to go against in by facing children to be more concrete than they would observice be

The computer stands tockworn the abstated and the concores in merry ways. For people who trind it hand to reliable to default things they use as additable, the computer acts as a kind of intermediate transformed object or stepping strong. This hash to posple appearating the boasty of more abstrate aesthetics and its in with tends in sitrare at aesthetics and its in with tends in sitrare at aesthetics and its rewith tends in sit-

Overs: How can computers help fill the gaps in what you call fractured scowledge?

Papert: Inverver clear annihal flaw, Lotti, comerci (a log un in the form that worked for rate) i can just give you select. It gets toolseed or travers because of the traverseand, to by and get or other worked for the and bary and get or other workers across and hope their is an explicit and that other one to build comercing out of them. What is built would be some endern to while I have the get of the first first and workers the built would be some endern to while I have in my head in the first diverse the control that allows more operationing and more owning the previous boother high the source.

ess. The computer does this Obviously people became mathematicians and poets betwee therewains computers. The computer can give us only more elements of the land that wrive had before

Great Does the computer than allow the chief to soal the tracture?

Papert Right I type fy to understand when angle mean and you are used to being boats you've got a lot of concrete mellenit to work with thus probably don't need a computer But for an average city led who mean saled used competer worked alkal wind checking in which angle to white there is uniting to take angle to white it famile distances the bearing a todate materia

Onny What have we learned about children's thinking since computers come into the internet plocess?

Paper The testy denotes exercise are in the set. or implantational wide of dency backback of every detect when and Tantage backback of very detect when and Tantage will accepted that a poor work of the ferwing accepted that a poor work of the dentect of the set of the set of the annexes of the operation of the set of the test of the set of the set of the test of the set of the set of the test of the set of the set of the test of the set of the set of the test of the set of the set of the test of the set of the set of the test of the set of the set of the test of the set of the set of the test of the set of the set of the test of the dens your "society flowy" of the set of the dens your "society flowy" of the set of the set

Pagint Marvin Marking and Tama Antribot Segment on The In on the Tage secondaries companies the Interface careful application companies that interface, tarter than an observation of the Interface careful application with the Interface careful application with the Interface careful application with the Interface careful application that application of the Interface National application of the Interface Interface Careful application interface of the Interface of the Interface Careful application interface of the Interface of the Interface of the Interface of the Interface interface of the Interf

Remember the so-called new match of the scient? The emphasis there was offening on throng the right legacit locations for it usations throng or plane has were wreather alterated attitudes loward at yet when there proved attitudes loward at yet when there proved attitudes loward at yet when have a science and a subtractor were alterated with the point of instance that the delinetion of addition and subtractor were alterated that was work for all and alteration were than work for all and alteration were than work for all and alteration were than work for all alteration of the science movement of the subtractor were alteration were than work for all alteration of the science movement and the subtractor were alteration of the subscience alteration of the subscie

Mahamatos is just the extrame case. Not of the literature on reading has to do with the theory of decoding. The arguments are whether you should do this syllable by syllable or with words as swhole. The very sizReturn to the reign of the pulps, the beginnings of science fiction



porrev back har when some shuffer meanwake, and planel way petals were no mee han draam in the Pites exercistion megazines showed as much sage tocksts, others planet show and methods in the Pites exercistions and methods all and except to the showed as much show the same show and an except of the show as the showed method and the show as the except of the show as the showed as the show as the showed as the showed as much as the showed as much as the method as much as the much show much as the much show a much as the much show the showed as the showed a

In the year H-pp Generatize, we vectorize yolds to entradiate and ence hungs for a publication featuring fartastic stores based on science. Generatize is have the saucher They were young form of the teetsche centry and they have the teetsche centry and they have lieve that assence and technology would made theses a memoratize true. For them Genetack ceaed Anazing Stores

His publications belonged to its genne of miggazines known as pupol, because of the charp peper on which they were printed Pulps contained numerous fluotisatio shores packed between garish covers depicting extremities scenes and —0000-







SUPER CIENCE STORIES

A STORY OF WORLDS HEYOND EARTHMAN, BEWAREI by DUL ANDERSON MANY OTHER







a:

Colorful cover illustrations gave pulps a dynamic appeal

sonaly-a savy gril to boost selec-"The pupp hard between a tworespiration of between a twocomparison of the antibia and authors comparison of each other." In all book Kyle Author of The Antowal Network of Savone Robot and a Savone (Network, Kyle Hall Scener, Network, Kyle Hall Scener, and 1920, Ducy Re-And Trados and Trados and Savone Savone Source Antipart Savone Savone Savone Savone Antipart Savone Savone Savone Antipart Savone Savone Savone Savone Antipart Savone Savone Savone Antipart Savone Savone Savone Antipart Savone Savone Savone Antipart Savone Savone Antipart Anti

prometor a clean nume Decessionally dis popphetic writing in purps was only one altepahead of review A 1984 descriptern or a (than Instrong) exercise bornd an Activated Science-Forhoring purphetic a walk by FBI agents to the magazines odder sourcetector pometer John W Campbell Many of tobley's BF workshift for published in Julios.

Then as now science toton deat with change" Kylo szys "Rocey paople scelar that science liction is a window on the future."

As we sature the present and a cleaner vow of what is to come, we pause and ply horizont to come guige. The anthusesmof ther writers, ectors, illustrations, and time paved the way for the science totion that we enjoy today DO











QUICKTIME

was afent a moment. Then his face, all but his eyes, wort clear. And your wickes might call it the cause of their lockingss."

The Professor found breething difficult The try blind eye of the stinger stand unwaveringly at him

"My Lord, please! It is only that we have not yet been able to develop a method for precise chronophise calibration

Garth read the old man's law. An unpleasant truth, that was what he was hearing. "Can you trung ma back ofter a suitable amount of time has plagsed hma?"

"Yes, my Lond You temain in the stress field, no mailar where you go in theil pencid You could be brought back at any time."

"Then you will do it? Garth said. He lowered the singer and stood eway from the shell as if ready for the purney.

"But

"Bowed as r. Gart sast only Prohaming me Protocol There in suited spart fail at large one who even is fail fait to me one who were solved even and the to conterning me task, when diff the is enabled ... I do not be added to the solution of the second the here to be added to the becommental to be added to added on the point were and and your children Solvely Ar they would have be added to be come of paint my Tower Do your understand. Prohoson? Do you really understand?"

The old mean nodated it had all been built, but the Reference could not know Garth was yring. He stath the tames of theread burn highler, this animal should not be permitted to elicapie. Even in an age one hundled and drive million years goow, he owl was something then should not be permitted to mail.

But he was old, and early highlaned. He was hampened as Garth was not. He had love in him. He would do to

The old man sealed his machines And when the bright, strooth melai learningboth stage had been elevated, and when the barries of time-attess wapped softy turmede with gower, and when the cons of orange light shore down on the stage, he told Lord Genth to staged on the orange rolder

The escape route lay open before the last of the sety Brother Lords. He did not move

Here easing a year hatter? I his such that adapted the old must be strang anough that you secular condemnyour encount and divers teams? The old more was too berrified to secular that and the team of the old that the dist as an encount of the horizons not maintained the dong on that the horizons to an externet and years pack hore and the horizon gave distance and the must be present and one of the must be must be obtained in the adapted of the distance and horizon that an externet work the must be reached and the must be must be must be obtained that contact the must be must be present basis contact the must be must be must basis be must be must be must be must be must be also second them? Am is not being



sent off too easily with so little properation? I ask myself these things. Professor And you do not answer."

The Preference clasped has hards new water "The darger my Lond would be to any cleatures long in that time, not b you containvalues from the future form softenlicities waters are might carry, that is the thought 'bed as you any ... you will per case the journey mot jections are new house the journey mot jections are new case that a you any ... the birth of an one logent booled or hem. Thereity years" hou

Garth looked at him. Wanty years " You won't live another feanty years."

"But reviewers and children will

Vand what if you die before the time is right to return me? He asked the question elocid, but it was as if he were workying it in his med.

"There is an automatic return mechanism my Lond. It opuid be set before you go."

And what would prevent you from canrefind it presi I was gone?

"Leosalde t do their my Lond. On my honor Leosald not do their "

Get is blaced as him selenity for is brighting Them, as it he had though it through bigcally, conselecting lively valgored possibility he paid. My agent will know when the timeis right for my return, for the momant when your beloved peaking and a Lord to come agen and rule them as before. Not any Benther Lords to it can used to for

Yes my Lord Your agent

Garth considered the old man. He seemed cowed by the brought of shadowy welchers. And where I of the grant scatteres thet, domrested the world? I am no pressent, old man. I have shaded I know of these dimensions. there tended mail adapts."

The final boar consistent my lost The copymonts we have conducted, the men who have gone back, have setted framework as surved or point to be monochronic. The destination of the monochronic the destination of the setted as the destination of the destination of

Garth thed to remember." They were her-

The Professor nodded with entrusian "Exactly Harmless vegetaxians Safe my Lord absolvey safe for the low moments you will exait in that time

Barth ruminated a moment longer then seld, 'I we watch as you set the return michanism Dolitinger

The eld man went to a controle of hearscrettive controls and Lett Gath stood over him as he deplaned the coltrations. "Set is to one hundred years inter lodge. The old man tapped out the proper coding, and the cities appeared in a liquid-crystal deplay. Gath studied the comma, and when he followed ham back to the transmission stage

The Professor motioned to the switch 'Out-

Gath nounled to the transmission stage of orange light. Sond me away, he seed

There was smaldering batted on the Professor sitece for an instant as he how home orange light flickered he raised the striger

feer he thought Nor need I Concealing the location of the pharaph's grave with the ex-

All through the Experimental Building esthobbed and hummed, the sound rising as the grange light that weeted him grave a lake

He feit a thin pein throughout his body as if he were being sliced neatly by a gant

The light stoped brillently And then the autometric outoff killed power to the banks of

raw, and opened his eves. For an instant her

It was marchland. Ready gasss rose all

He could look off across the floodplain to right very near gigantic cycacis shood in a forest crush that dominated the area. The leathery fronds formed a wolently great

ropods. He had materialized in the matche of the herd. Messave bodies seventy feet with their yest toorseen in the moist earth.

The sound of the instant of his arrival was

started at the report twelled its great snowly

in the instant of awareness as he new the time to scream and only hell enough time to thrik But rash asts yearlaters

Nor did the gargartuan herbivore est most As its great persolamped transalves tech the deceaur understood in its clim way marsh grass was not a tender new kind of

And from a heralt it disposed the unplease art two it had readed to tample To readet

The arower was very Bull not quickly DO



Thinking about a career as a researcher? In the classroom of life, being a seeker of truth is in itself a

HARD SCIENCE

Is not in the college catalog, while system integrated is solven if its mand black on any systemus, and by the one-you find out about it, you have profile systematics with they cont-portially out the lateral of the sequences they could profile global the system.

Asrodynamicst and entrepreneur Paul MacReady is building a full-scale, wrig-flapping replica of a pterosaur, the ancient flying reptile 9



ty of barry a scientist stacks up against the ideals and goals set forth in school. We asked a group of accomplished scientists... social of many filmes, letters with, praif skimming, departmental cocktail parties Byzantine apademic politics, Department of

All a good sciontist needs is a Ph D and a tamed human-powered tight in 1977-18 years after the prize was first offered MacRearty a basis project is no less imabiping replica of a pterosaur, the ancient flying

mobile. Sometime change the summer of 1985 but fight over the Washington Mall

Suy minimum and colore scence and rear But MacReedy actually conceived of while thinking about something else. His mspiration wasn't a wizered professor or a the birds banking and cilding through the

His vulure observations suggested the twel strategy was to make an experient large and bolt arreat 'it duty't have to be effican't so long as it was big enough and light

Beaut information he needed on banking angles turning radius, wing loading, and the flight speed were simple to compute. 'If you watch, a hand paiculator, and a protractor these measurements while yours driving

fortunate "Is do their science, they need

particle accelerators, large telescopes pane-sequencing apparatures indeficin counters manager Coly computers, laboraor graduate students, and other toppinews

Grants come manfe transfe transition U.S. government via the National Science Foundation INSEL the National Institutes of Health (NIH). ernsts are as dependent on these acroriving overloids as Penaesance artata work dependent on the favor of Medici princes

When you got a grant? recalls physical percentage right off the top. I was shocked universities. Most of the skull done on orants

comasten motil tester. "Do vou know about proposal passing?" asks Ralph Abraham a at Santa Cruz Mathematicians, being labusually divinely aloot from such realities, but ross a nim oververw. Person A sends a crant exposal to the NSE. The person at the NSE sends it out for reviews and gets back very control reviews. So now we know the ideal It who writes a very similar proposal Bis

And what it the money stops? A labora tory accented, if he loses his grant is been your secretary you lose the three or four key technicians you've worked with for thiseen

Good teachers get tenure. Beadles grants (Incleard, the two tend to go together.) How many years as an Citrtermensch-a gridu are student a position an unterrurad laculty moted and remain in the no-man's and id Centarity being a salented, dockcated teacher would be part of the upwardly motrie pacters, upp?

The States Mark and States States and States States and States St

Bome control tortror to call with registron call of the protection call and in a forcer to refer of the Discovery of the torter of the second call of the call of the second call of the call of the location of mooters of a lapter is using to call about mooters of a lapter is using to call about mooters of a lapter is using to call about and Corrests. New of which boost of a label call of the same the No. (No other call about a last of the same the No. (No other call about a last of the same the No. (No other call about a last of the same the No. (No other call about a last of the same the No. (No other call the same the other call the same the same the same the call the same the same the same the and to be it yoom to the same the call the same the other other same the other other same the other other same the other other same the same the other same the other one of this fares harm in the Miss

"I you take it for garried that it will go on increver immobarred from domg mydnigho says" "Of occurse i don't have througs like prouse and my salary is sufering." But Mis massatemic thom hits barsascrady and poperverk has goes with garling contracts. Somsbody alse gets my obmatch for moanth used for that action."

Contrast of the second seco

Top constraints about Tarrelat regularly and such at the White House. Buy out wint to make a big breedmough, to exolice in the outing edge of your discipline or the winty cauge of a participant of Well. Pycon wort good hous—and an environment highly more grammercus than a surgitable supply assos—about point to the post of the basis—bout points of the post of the supply interview (PET) nerview, candidaant participants (antibida-



Very otten Lend up working two, three days around the clock

It look serve devendes some plantes terminikkens – on rinnag vik polationlikeled comprovid model polationtikeled organization model polationtikeled organization and polation interview expected and the terministic and any ender the wind is large to any of the terministic and a server and the terministic and look at the backgroup processes gring and a look at the backgroup solves experiment reach has been been to make a server and and the terministic and terministic and the terministic and terministic and terministic and the terministic and termini

Dr y course and the test model of pair selar physics, you hive to a large digiter, will be highered there are available of the autoto address the test model on the autotopic and the test model of the autocolorized and the autocolorized and the autocolorized and the autotopic and the autoneor physical and the focus tasks will be not performed and the focus tasks and an extension of the focus tasks and an extension of the focus tasks and an extension of the focus tasks and a focus and the autotopic and the

Acid instituig they were hearted in Brych foll sould have prepared luvership of Nevedre prychologists R. Alter and Beattin Gardner for resing a faileing in changemase in a house trader in their backgridt. They had to learn everything from scratch from bold training to American Sign Language (ASL) it was topb more like patienthood from prot appay bai whole, day one end for Spock.

"It's wenty-tour hours a day seven days a week withing vacations" (Beahs Garcher reflects: It's feeding balting hogging auching them to use species, face ther shoes it's secting tham balter ways of gettern Warmy's aborton."

As the welfs new insers the Gardner hang Weshow exercising interfered a 12word vecability in ASL and went on to inthe same of the second second second second to supply sense additional second second second gardner and the second well strate second second second second second wells the second particular second particular second secon

"Is an ancest data," says Beckm. Cananer "Inhad been doep before with chargemcase, yet the experiment entracement tempertensyou have a common language. Not level to be able to metsue the child, and the child has to be oble to measure you and tell you thinks." Hence the conflictions

Befase Washoo moved into their leves, the Galdness had worked with creatures that were samplated to very unlevel the "as batim Galdner pols # Were was a rit man, and I was a spater reamain. Why old they take on such a complex project? Explains Alain Galdner Will be resylithings in science had always been class.

Discovenist speak for themselves in 1977. Carl Woese, a microbiologist at the Univarsity of Terps, discovered archaetecters is



five was needesting the most important component in your system, your listening toom. Then make noun for the new Yamaka GE-60 graphic equation: With 10 bands of ±15 dB faced benchwidth equalization conto

it can give you perfectly flat it, quercy requirise in any listening amirometri. Easily And queekly.

That's because we've pryviled the GE 60 with a best in pink none generator and 10-band in quency spectrum analyzer And an

load electric condenses interviewede penk noise level at each frequency on the spectrum analysist make tened. So you hear your masic with all the realton it should how.

You can do all this without any output level induktion. Because the GF and has right and left output level controls to moter the total output level of the EQ On mode with the EQ Defeat more. Or you can do most of this with the GE-40 and GE-3 graphic.

equation of Minchewron. del you choose, you'll lost what they do to

Samaha Electronics Corporates: USA, 7 0. Box 6466, Boxes Park, CA 20422



constitually desired family of bectarist that live different a new form of the Two years later in Derwins ' warm little pond " he ramponed trese would be sittwater dropids---is a noe place for a cel to begin it has surface it is

Celebrated even in Time magazine, the archae it would seem were important But to do with it." So it is in quet obsourty that demental laws of biology --- in his phyloge-

Washoe becan in 1966, the Gardness con-

Lyndon Johnson to resand their chart, and

own collesques sed. Rolculous it wont

Go after megatruth, not mogabucks. When academs? Well, you can take your Celench agencies or doing any number of things youre a physicst, you can make bombs for

Some of the academics there I we must tuted myself says Ronald Excessor whose

conferences it's you know Next side rienze Oh himm are you sure that a Parametsking? God it's temble!

Anned with a Ph D in reproductive physicontraceptive Then of Shering A.G. in Germany in 1973 Encrean constephs chel Encision claims "Do you think Loculd have gotion a grant for sex selection?" he ades rhetonically. No way! 1

After or patienting his benefit herough, the stated a company Gamarou, Lik, et Sustate calorina, which now has 37 accrede to a state of the state of the state of the hospathiched in the respective/parmain and hospathiched in the respective/parmain and hospathiched in the respective/parmain applied sparmer hospitation and support has paid sparmer hospitation and support applied sparmer hospitation and support applied sparmer hospitation and support applied sparmer and an under a support applied sparmer and an under a support applied sparmer and an under a support and applied sparmer and applied sparm

Science is never sexy Wouldn't be easi in tak to potimis nesi-retive law instead of the laws of space time energy and matter? Whit are the rewards of science that make it worth slagging through the phils pecocols, power spectra, and Maxwell-Boltzment desputions?

If you's init addressmer, you "have the which unvesto to poly with 'n Chains Kowith works I by out a molecular bolgst, the "When you can sequence nuclea addr. The "When you can sequence nuclea addr. addressmer directation the call gains" Nou know what the coll knows" If yours Mills Phase addressmer directation the test gains. You know what the coll knows" If yours Mills Phase addressmer the test channel and scapes of the basin energies from your porlight. And you any "Nobody has ever chains addressmer the test channel according to the test and exercision."

Bisiking the interspecter-communication tomore was worth aff the tocate is tockaccording to the Gardners. One day tools are applied to the state of the top of the interim and dopped to by hadde a Beaton receils. When Alex aread, she was postreceils. When Alex aread, she was postaid was the postform was and thread out toppered. The obmpanics had tad too asserting with had to were of browing.

To me physica as karring the rules of a wonderful, wonderful game, "anys Carl Breakinks" The geme is the natural laws of the universe. And those rules are not well understood Most of the game as played as a much laws lawer view. To work at the level of finding the laws is view view rules.

Physical Loor Loderman agates - Hankas wold fracciphics preventions of particle acossentions: Such in Tracipit to become Used of The Use's young mit to evelope new domain it is live being in an atter that no cree the were replaying both and its for the nobooked truck all covered with cobserbs and public both on the Look and thy to forgare out there is equin if Then a few weeks later your the live both on the look and thy to do cover that the live both on the look and thy to do cover that the live both on the live to the live both of the live both one of the live both on the live both one live both one live both the live both on the live both one live both one live both one the live both one were both one live both one live both one live both one live both one of the live both one l

Samitaries that discovery happens at three in the interning when youre at alone, unring opperments. And you sakes that have sets four ballon people on the planet, and only you know the ballot. and the fact as importent. It is about as sexual a moment as you can have by vourself. ICO



Buy Hasbro's G.I. Joe from a toy store you'll feel like saluting.

When you shap with us, well gave you good server, good prices, o good server, hav, and a convenient location in shapping mice scross the country So when you're come to the toystare thort will read to be come to the toystare that will be you'r wont to salub them Take this quiz on the future to see how you compare with Chuck Yeager, right-stuff plot and amaricas

VETERAN SPACE PROPHET

sections reaches the section of section of the section of the section of section of the section of the section of sections of the section of the section of sections of the section of the section of sections of sections of secti

Une of American the specie hardward of the the first powers of transition for entre-solution or packo, into the actuality of interspect head into a church thispaci in 1947 he bootene the first human to fly factor than the speed of south beauty to high actor that the speed of south the power head or intersect.

supprovement that and utilitative, operating-warm that is non-born were hand an barn, is droig at weight with the Sets, Weight Wagne marries, boots, and notice. An enter the logic state were however if a few Water House out one state stand states that is the source house one state stand states that all the local metabolic were however if all so which House out the local state of states were planned in the local metabolic of the Sets were all were metabolic metabolic of the Sets and states and the local metabolic of the Sets and states and the local metabolic of the Sets and states and and the local metabolic of the Sets and states and the local metabolic of the Sets and the local metabolic of the Sets and the sets of the metabolic the metabolic of the sets of the metabolic local sets of the metabolic and sets and states and the sets of the metabolic metabolic of the metabolic metabolic of the sets of the sets of the metabolic metabolic of the sets of the sets of the metabolic metabolic of the sets of the sets of the metabolic metabolic of the sets of the sets of the sets of the metabolic metabolic of the sets of

> PHOTOGRAPH BY PETER STRONGWATER



the nations consciousness as one of the Neador (Bantam, 1983), step conferns his

When the editors at Grivs began search ing for an authority to predict the future of provided the answers to our first celebrity muz (July 1965) Yeaper is a poneer in his field someone who charted the unknown So we approached Yeaper, now a rained Air Force general about the luture of availant tion will test put a man on Mars? Are women better able to cope with the ricors of spacealert in space in the year 2025?

For each question in this guiz, circle the do you rate against the man who broke the sound barter? The objective in annaeming On page 182, you will find his arrawers as

wall as an analysis of the quiz. To recover your score sally the number of times your own response matches Yeaper's Then check your score agents the Costs F-4 an town your vision of space and avation

1) What would a twenty linst century plot say was the greatest avator feet performed oval the scatt of the twentieth cartury?

- a Orvite and Wilbur Wrights made: flats at Kety Hawk in 1903
- h Chavles Londbarch's solo Fansatianto
- c Chuck Yeater's breaking of the sound bauer in 1947
- d the fest nonsicp jet transationic flight from Exclused to Mann in 1942
- e Gorten Cooper's picting a maîlurchon-

2) What raited will ligt put a man on Mars?

- c Tampe-Ithe European Space Agency/

St Firey ware to look through the classified aris in the what 2025, what side in space would be most provision?

- a sationauts and fight-crew members

- d computer programmers and robot repair
- e assospace anginears

4) The moon has not made headlines shoe Which one of the following events will soluti

- a an estronaul walks agoin on the moon
- b the Linted States beams construction of a nerrospect moon base



- c self-replicating robots start mining operabore on the moon
- d the Sever Urion stakes temtorel clianti

5) American astronauts and Soviel coarso historic Apolio-Soyuz/masion in 1975 When within two superpowers undertake another

- a before 1930
- b 1991 to 2000
- 2001 to 2010

As compared with male astronauts how will female astronauts handle the rigors of

73 The beth of the Tirst 'space baby' will undoubtedly generate banner headlines around the work! When will has make child

- a on an orbitano space station
- c on the space shuttle
- d un a colory on Mara

B) What method will be used to keep hu mans sive during intergalactic travel?

- a cryopenic freezing of embryos, to be
- b human hibernelign
- c drug-induced sleep
- d "projoncevity" through ille-extension
- 1 man will never trevel to other galaxies

S) Will we ever come rito cantact with intelloent extratementari life?

105 How will the zero-g environment of space Tiens affect sexual relations between man

- a sexual relations will be vasily improved in
- h several mintree will be substartially m
- a there will be no major change

11) Whet will be the most senious psychology cal problem affecting the first special colo

- 5 malcuny
- d impotence or sexual withdraws
- el pontimement or obustrophobie

12) Three weaks after Alan Shepard became the first American in space President John F Kennedy and in his lamous lice tothe-moon' speech "In a very real serses, d will not be one man coing to the moon it will be an entry rollion " When will a spece

station) declare riself a seconda ration?

- d. beyond 2050
- a newsr such colonies are too dependent

13) In the year 2000, what will be the most

- a pharmacouscial manufacturing of space
- h industrial manufacturitio, such as perfect

14) The Enois Gey dropped an atomic bomb

- d honly unitally

- a wrigs swept forward
- b propellers in the rear used for power (as

- c bodies built of plastos, rather than alu-
- e commercial amplanes will remain substartaly unchanged
- 10) What major severations will most likely come as a result of the 1966 Isunchino of of the most widely heralded events in setransmy of the next ten years? (Choose as
- a the cascivary of new planets in other so-

17) Which planets will astronouts have already visited by the year 2050? (Choose as

- b Mars (50 million miles from Earth)
- o Jurniv or one of its moons (390 million d. Saturn (793 million miles from Earth)

59) What would a space historian of the next

- a Yun Gacann ndos the Vostok 7 to become the first man in space (1951)
- b Net Americang makes man's first luner landing aboard Apoilo 77 m 1982
- a Scient commute Amaziv Berezownow necord with a 211-day marathen fight
- John Young aloft for six days in 1261 m-

19) Will a twith planet beyond Pluto be deopvered in our own splar system?

20) Will human pilots or astroneuts ever ficht

21) Enow takes a minimum of 12 hours to fiv from New York to Tokyo. When will it be possible to By that distance in less than these

- a by 1990

225 It e New Year a Eve December 31, 1269 How many pocole will be chinking champagne in space?

- 1 32110 1000
- g more than 1.000

20 Worth of the following fuely will most likely power our spaceships in the next century?

- d solar power

24) An American teacher. New Hamoshire's January 1985 How will children be taught in

- a traditional classrooms with turnen teach-
- In classespone with tobols or correctors as
- c jobots and computers teaching childran
- d parents leaching their own children

- a mechanical maturición (i e , electrical fea
- b mentry
- o murder or suicide
- e nature causes live heart attack or shoke





Instrictional years ago code workle fieldly kei Benney, kei fisike hey were driving through the flaux while hey were driving through were driving through all models there all were reached ther alldition of the second distinguishing a course of second second there as distinguishing a distinguishing a course of second second the reached there all distinguishing a course of second second the second second second second second the second second second second second the second second second second second second the second the second second



UFO UPDATE

considered by cook, and even made that a movie

body, following Bistravy's clash: Betry (above) all porsizes the LFO engines with relative based on the thequert includes demonstrate har based that LFOs must be untrack by autometricity volume. Next two base tracks and which based in these which are an empty hard 18 miles from the Pottomouth. Nex Hangshare from "The based track brsphillings, she explains, is when the temporative pathmich to should hear's centralies below anti-must read

Acrough berry recome that she has not been taken accord, A UPO since her intel experience, she says she has had as many as 80 softenes a mate

She also says she has communicated with occupants of the LFCs. For instance one right she spotod a strange stopot in the sky above the field and yalled. See here says here. Stepringly in response. He says lights on the LFO formed the knews ALC.

Explicitle by these claims, psychiatrist Berthiold Schukerz

mouse less Schlers India biales in twind a product rest of an approduct rest of a schler mapping during the evening. Neo policio offiness stapped and antistuated the less to clause of a schler and an application of a schler clause of a schler and an application of a schler clause of a schler and an application of a schler and there and there

But Hill has her own

Social services in the Carlot objects part and the State materials of the Information of May 2. Helds for instance, as in a provide at the Information of May 2. Helds for instance, as in a where the Information of May 2. Helds for the May 2. Supported to be made of wood and was investigated in particle. But as the support when the May 1. Helds at Lands of the Base and approximate the Mayon I. Helds at Lands of the Base and support when the May 1. Helds at Lands of the Base and materials are made to the support of the Mayon and Mayon support when the Base and Mayon and Mayon and Mayon and support was made the as more theory mere support explanation. That the Base more theory mere support

Altograde engineer and LHD skepts James E. Oberg however has the doubt. If UFDs can appear as shareds and anothers he asks why can't bey disgues them carves a portion on measurementer? I don't doubt the Bety Hill betwees the social. Ob, but (PDS are fold by (PDS—donning type) gageds—and there are many honest measurements.

-PCR MedSREGOR AND TRISH MANESHUTZ



SUCIOED/GT OF

A people with rule is seen expenditioning port of the provide set of the post of the second set of the post of the second second bid. They apple the Michigan Doy in a second bid. They went to bodie the bidsal bud when they canned the the second bid the the set to bodie the bidsal bud when they canned the set of the the set of the s

According to Ronald Westrum a sociologial at Eastern Michigan University in Yosalanti, most people are unwiking to accept Uniusual access Consequently strange or consequently are usually ignored

Westman who has studies the sociology of hutchin several to the past an years back to the past an years opurage for a scalate to measing the true unknown measing the true unknown measing the true unknown measing the true scalate to the scalate scalate the scalate to any measing that was included the true scalate to any measing the scalate

Taken of the unknown Westrum concludes has resubor in huge gaps in our knowledge. This is why the policymakers who must make average and the must sufficient information, as anyone can see from the gatements they make [

The appearance of connets has often been thought to brend the speedy dissolution of the world."

Charles Markey

ROD ROD

Beny Jo Hudson doesn't selevel i the old adage lightning nexter shikes the lame place twice. In fact the stegmening to be low her teaming bots of electricit lamenous follow her lectricit.

When the was a child ignating struck her face and her head and her parartis home wisi repeatedly til. by lighting bolls. The third job. in 1957 literally destroyed the house.

More recordly Birthy Jo and ret hughward Ermist syw winnessed multiple grinning strikes eround their nome in the Lily nutil comruging of Wirborn Chapel, Massissiph Their house with struck there yield an a towincluding More Nati summore ward their neighborn home ward stor swithing both semigliad by a Lightning both

Interlation there participation with enclose the Husbans water eating on their potch the line objecte beans when the averclosened And a summer some moved through. The objectore and there from bedroom and minutes taken bodroom and minutes taken bodroom and minutes taken though apolities bedroom window. If we had been in there we would have been in they means to the beat of exects.

Other bolts of lightning willed her dog struck is the and a pump and carried deep rubs poross the yerd

Peenaps in one of industry people who attact infrinting people who attact infrinting befy do says. And her inends suggest that some underground chemical may be drawing lighting to Winhum Cheving lighting to Winhum Cheving light area. But per nubble https://www.commons.com

19. Estis much of Herry in the realit "

-Witham Shakespeare

Now Esters, your

welermelans—if any theres came—sum into hogs¹



ANTISMATTER



MARY VISIONS

The operation are compared awards of the Version Mary. The observing of the Version State Charton has index a service of these overalls masculaus and whether Consult average of the observation are service and whether Consult average observation may are not of the head of the externation. The vectors had service and they are considered and the service the service of they are considered and the service transformation of the service masco of conset ways the considered and the service transformation of the service

In this recent pools //re Final Choose Polycong this Sun web Edition, Grossic suggests that Many waters are related to near death expenses and contacts with LFDa "When II was researching near-death expension near-death rependences I found people would repeat roly larger of iterminated bings that had inspired them of the white messages have been expering a ose incounters with U-D occunante also take of bright lighty and luminous beings. All this accurds much like they acts of Mary And the alterfreeds---charge in values and U-Mary And the alterfreeds---charge in values and U-Mary And the alterfreeds---charge in values.

Global concurst shad function thages are provided by crisis including the press withhold of each share reartion of the product including the product the product including the entitle home in crisis. When the entitle home including the with tappents with which including the product in the set for any likely see a surge of Many watch is availed in fact. Group is contently studying a loady of paths with the agrinus of potute in floadbalana

In every bird, I have a river

MENSKS PSI-0

UNR some office membans of Mantal Carole Jeanne Rockwel has a design internat in psychic phenomena. But whan she tosid to proceed has intrees into an out he high IO society's local newlicitars after her high tought.

party, Florids woman subinitial an ambundement to the Tampa Bay Soundary about an upcoming seminar on nan-bahnaton and hyporo sis sponsored by her Warks plattority-chology group she was table that the holdon

Car opnoam was the legality says Cynthis Foher former octor of the Messa newsletter. It's degat to practice hypnosis in the state of Florida whout a hypnoflastatat s toxine."

But according to Hockwell The one was going to conduct hyphosis. The problem she asserts is that there is a group of obser minded Mensans in the area

To dost with the problem Rockwal Invigi restore Kenratis national haradquartows to recognize the paragolychic regregation of the paragolychic representation and the publishes her own networkship with function and SIG membasis made regularly the provide such representations are built water and SIG memhaling pryctic architecology and widercate

repretenteess Hoorwel see expects trouble during a second in which she plans to undergo hypnosis and export huture Hell "Several Mension the Terros Bey area she explains here hreatened to lie a complaint with the rational traciquar ters asking them to deband the SIG if hypnops is used ?

too notweet and a wrate a Morean is going to think about this topic " says Challes Schilling who was responsible for graning Rockwell's group to national SKI status. Nati unkees you med murds.

> -Rob MacGregor and Train Janeehuts

I never knew a vigorocia and stanightmickel paration who were a medium th negative a paration of light complexitive considiant of a nervous amplemental with cold hands of a mild, impressible and parate disposition. Hands grate and Amsyles Hands grate and Amsyles.

- Revenued Walliam Ferris

The secret of this journey is to let the wind blow its dust all over your body.

ATTOS WINCO



ANTIMMATTER



ALLERT CHINGS

The complete of ankiewylweer not just finan camota i uhei goddi. According to inventor Pru Barom of Brass lacho may housed huga accessed aparted has be generations of baby. By Science of these of baby and camota synchronic program. Science of these of yustanes to demonstrate fail has hear populates to the works.

The encome kin beind representations showing how to build their generators bound destrial. For thossincs of years. Ensemandates have been thought of as sectare symbols of the universe. But the buth of the molter is the they are solvertails charging.

Brown who calls himsell a specialist in nonconventional 122 CAN serger reprinted the chartists dear-flower mandatis correipendis to a wring diagram ound in the modern day Company of the chart day company of the chart day of the company of the chart company of the chart day company of the chart day company of the chart day of the chart day of the chart day company instantiant

To teet his freery Brown is using yet alrocher's soci of your sold: the ancient Grinnee readjoint at the final test the baery of the LObing. Yin reality, down opposite could have game appropriate could have pass on energy to neighbor have to solve the solve of sectoral public is forced to tavyet accound the mandala' monthme.

Browns consection based on the beaugrams is made of shear and mansformer whe tip produces measurable electromagnetic energy he clama, even though there's no torque in the sheft. 11 produces no variations at all he clams, " and could probe bly last a thousand years.

Addit Network portable of the George Telestical Control of the George Telestical Control of the George Telestical Control of the theory weaker the telestical of the theory of the telestical they work they telestical they telest

Not necessarily, Brown contends: We may still redescuver softer im portant information a great truth what the anoximits of the East soft the Tao or ustimate knowledge '___Sherry Beker

"X is as though we had never been born "

- Norman O Brown

INVERTIGATION OF

A nonnone stal calves webs relation may somhow higger the outsidencory talents of the psychic. That at least, is that theory incomfy proposed by William Roll director of the Psychical Research Foundation. In Chepel Hall North Catolina.

Boll got the first class to the observations from Firesch and connologiet Alam Assaily who souched mediums in the Fires. Accardly found that he moyotry of the subjects subjects from water recention. And in another survey of more than 000 formilies. As saily concluded that premanatrual bloating was common among women who cerromistated marked ESP abrittes

Contoring the information of psychols that information of psychols that inprove that control de psychols that information that the water induced and the that the the second depresent the information of the second depresent women have been sound to any beychold water Alon me clarge through the pertain clarge through the pertain clarge through the pertain present as historical during thems of shores

How does vascpressin influence psychic powhx? The enswer Roll belows impact on the hormone's impact on the autonomic nervous system. Where an imbelance may tead to pr op both lives

Bait-Bots deas are a long way teen percentaris. While is an percentary count to its horizona, "any comparison to be logic D Scott Rogio or John and Calorina II don't think the older on a structure percentary and the percentary and pe

Sisten there's a half of a good universe next door MEX do '



Boston Latin continue to pass on social/S since of accumulated knowledge, this will become ever more crucial in the future, when playing exposed to a daunting flux of informotion must thick for themselves

'Our meason is to propere students for higher education through the classics " szys taxon eline Tibbetta, assistant heavimanter the years, but the original mation is easen

Boston Latin had a motio. if would have to be "Study the classics and work!" Each of the 2,300 students must take I wan for all of Ladin beaches students to learn in a sys-

crammed with at least one other foreign lanmage End sh meth helory or social stud take earth science and biology Most shat puter leasely in severals grade and another ing in the junio' visit

Altogether the course load includes so two and a half to three hours a night. Assomments include a seeminply antiquated practice called declamation. The student, standing on the stage in the school's mahopany-peneled suditorium and flanked by antique portraita of sogwing headmasters. orged to as many as 1 000 dissenates. So raft is the competition from this and other class don't make it to graduation

Not everyone trinks Boston Latin's Purtan work error is the best way to learn "It's good for chuming out grade grubbers." style is teacher in another Boston school, "but you wo lide? what to rand a creative kid there It's also have their part of Boston Latins sucgets is that it starts with highly motivated laris Celv an eighth of the soughly 4,000 students who apply each yoar are accepted

Yes it's hard to answe with centuries of ancelence Roston Late slumm include Ben Frankin Leonard Bernstein George Santa vana, and dozons of other luminaries in sonone and liberal arts Last year of the echools 325 seniors, 98 5 percent entered four-year colleges, according to registrar Plato Haberation Twenty-two were admit

You shouldn't be ashamed of hard work in the classecs, ' ages Ticbelts, 'It's not just a and soul and everything about you it's a

CLON, ARA, ANN ARBOR, MICHIGAN

"We want to be a family again and bring up our own children heisters them the THE CMM

trings that we feel are important. My hashand is a ratural teacher of skills, and ma son, age rane, loves to be with his dad. The school bus took our son away from us for the better part of each day when he came home he was out of sorts and weary from schoolwork. He even carrie to look upon honset as a bad student if he didhif get mood grades Now we can spend more time with energies. We feel this is the best kind of edupation a child could get

indeed, like this mother, many people feel that the ideal future school will be no school et al. A converse movement last by aducator and author John Holt advocates turning the home into a school with parents serving as teachers Says Holt, 'The school of the fu ture will be the home, the shoet, the factory, I want to give students the widest possible

But according to Holt and others an elfective home school must be backed by a center that provides support services and

We can't live on an island called Kansas or Massachusetts How can we talk intelligently about things on the maaa if we don't even know what's aping on in the country next door??

party equipment that the ordinary family is unable to afford. One such penter is Cionlass, founded 18 years ago by teacher Pat Mantapreny for children of her own

Named for Montocreence arcestral fown in Ireland, Cioniara soon became an allernative private school with about 100 young But eight years ago the school returned to its avoils, offering services to home schoolers as well. It began with seven families and now errols 637 families including 2,000 and six foreign countries

Home schoolers who join the Clanlara network tecroir a complete professional they can use the program as is modify it, or develop one of their gwn. Some for instience, add intensive music stuckes. One such graduate, a subern-year old who excelled in advanced placement exertinetone, is now a college tophomore and plays with the symphony orchestra in Fast, Micha ran Other parents might wont to wild heavy

Those who do rely on the Cloniara pro-

gram moneover, can work at their own calco teen but he already has a year's worth of college creat from his local community collage And his rapid progress comes at least in part from working inconsively on one subrect at a time. "The average high achool stuclose divides the deviato about two different centrally work better if I stay on something while my interest is up-for as long as ten or eleven hours a day every day, until i'm ready to do on to something else

I (in Holmes, members can buy learning metenals at discounted prices Cloniara also twips them navegate state laws poverning home education if officials take home schoolers to court, Cionara helps them document the adequacy of their teaching traches parants how to teach, consults with them by letter and telephone, and reviews monthly reports from the parent-leachers othering advice

"I hope home schooling is an eye-opener to the present day system." Montgomery says "Home schooling empowers people. they can say 'I did this. By the exercise of free will they can follow visions of they own

Because such visions take myneid forms the Omy panel of experts nominated many other schools. Here's a rupreservative sample of their sciechors

Harper High School (banking and finance). Aterca

Stuyvesant High School (science). New York High School for Performing Arts. New York. Anation High School, New York City

Booker T Washington High School (sci-

Barbara Jordan High School (vocational),

Benjamin Banneker High School, Washing-

North Caroline School for Science and Methy

- Middle Callege High School at LaGuardia Community College Gueena New York
- New York Prep East Harlem, New York (for inter-city (compilers)
- The Armand Hammer United World College of the American West, Montezuma, New ince couply and increase structure

Bingis School for the Dead Jacksonville

SCHOOLS FOR THE DISADWANTAGED

Petersiderg, RL Returnoy High School Teachers Center

Sulvan High School, Chicago Garlield High School East Los Angelos

Dveit Middle School Chicago

OPEN SCHOOL

Super School, othered after hours at Third Streat: Exmentary School in Los Argeles Duroulum indiades everything from jazz, French and ballet to city southtire and computers Both oblits and kids are eligible when the element 1.

DASIDERSCHOOLS

Despire High School, Advises Seyner High School, Oekland Peritend High School, Postand ME Martin Brigh School, Moenna M, Martin High School, Martina M, Davis Hagh School, Brann, CH Canvil Nack High School, Brann Neck, M Edina High School, Brannan, M School High School, Brannan M, Boarnace High School, Resenant M, Boarnace High School, Resenant M, Resenand High School, Resenant M, Brasenand High School, Resenant M, Martine M, Barna M, Bartan H, Martin M, Bartan High School, Resenant M, Martine M, Bartan B, School Hender M, Martine M, Bartan B, School Hender M, Martine M, Bartan M, Bartan M, Bartan H, Bartan M, Bartan M, Martine M, M, Martine

Dalansa dependent school) Heidelberg Mittele School (DoD dependent

schoof, Heidelbarg, Germany, Rachmond High School, Redmond IW, Jaana High School, Kinkand, WA Mountan, Www.High School, Wesa, AZ William Hall High School, West Hartlord, CT Alderdoa High School, Phtsburgh Weytand High School, Phtsburgh

HOME SCHOOL

Santa Fe Community School, Senta Fe NM NONPUBLIC SCHOOLS

Norksik Academy, Nortok, WA Looms Charlee, Windser CT Relea Academy, Mitan MA Begis High School, New Yolk Genzaea Colece Herl School,

Washington, DC Fieldeton School, New York Horace Mann, New York Rejentate Country School, New York

Sant Andrews-Sewance School Sewance TN

Philips Easter Academy Exclan NH

HIGH-TECH SCHOOLS

Waarland School, Provo, UT Lyons Township High School, Lyons II. Genetaed Weal High School Glien Elym II. Waatan High School, Weston, MA Marshai Walker High School Richmond W Forest City High School, Froets City, IA

SCHOOL DISTRICTS

Jefferson County Public Schools, Lake wood CO

Westside Community Schools, Omaha NB Petidourgh Public Schools, Prisburgh Duval County Public Schools, Jacksometin R.



Forest City Public Schools, Forest City, A. Houston Toxas Independent District

National Instruction Discussion Program Assiss Question Statistics Instruments In at all activation in the station Number of the statistical promotion based occurses to rund activate activation to activate working online instrument. County Winnia High School, Homitor County Winnia High School, Homitor County Winnia County School, Homitor County Winnia County School, Homitor County Development Speak, MD Information Trapping prosperation functioner Col-Montan Mark Countyman, The National County Information Trapping prosperation Information Trap

Nonzo A. Crim Superintendent of Schools Atlanta

- Stephen S. Kaegan, coestrissioner of education, Vermont
- Paul B Salmon executive director, Amelican Association of School Administratore Stephen Kuriz, headmaster, Philips Exitier
- Academy Exeter NH Millon Kooviman photopal Bronx High
- Million Kopelman, principal, Bronx High School of Science, Bronx, NY
- John Holt, educator and suffor Davis R. Parker, headmaster, Haverlord
- School Haverlord, PA Ruth Groon, administrator, New York Loague
- Jack Anderson, columnist and head. Young Astronauts Program
- T J Alexander superintendent of schools. McComb, MS
- Potor Gloser space origineer, Arthur D. Untie, Inc. Cambridge, MA
- John Agrosto, deputy charman, National Endowment for the Humanoles
- Gordon Cawelli, assocutive director. Association for Supervision and Cumoulam Development
- Gary Wats, assistant to the executive diractor National Education Association
- Dwight Allen, emineral professor: School of Arts of Lotters, Old Dominion University, Nortok, Wh
- Robert Lehman, Lake Washington School District Kirkland WA
- Gregory R Aring, printedant, Educational Testing Service
- Scott D. Thomson, executive deuctor, Nasonel Association of Secondary School Principela
- Bill Horeg superintendent, California School System
- Dene Ravich, adjunct protessor of history and adjunction, Teachers College, Columbal University
- LeRoy Hay Connecticut 1963 Teacher of the Year
- HaroldHodgkinson Institute for Educational Leadership
- Richard Wallace, superintendent of schools, Ditabarah
- Madeline Hunter, professor of education,
- Joseph Price head Science and Technology Dwalon, Library of Conglisie DC



ordenies hank i m crying with py to be back. sow of say, each hooked up to the computer

They get me in a phan and Sim role me petit the empty caskets and up the ramos to debreing Rolins? Lask het

Iddn't like Rolins. He was even upler then ion ownersee errorsers and a distorted torso asteen the boked like he was stanno at you a crysk you got to have a sense of humor thut whatever his faults. Rollins was the only

my exempts maybe a conton servisite They could lat me not too close laber all 1 might be contactors. They are normals 1 am

what am I? When they conservated ma I was classified as an HM, Haman Mutabon, require The hum ones are the nonveblos whithoens and intent dealths and living vegges We got makers of lem The hum twos are vebabut useless, all the gran with some Graham himself used to call us has "timondnet before he prosed but that's too to mantic for Major Salazar Salazar prefers fra official government term G.C. for Braham Chevronet The orderies and orunts turned G.C. may gook, of course, and we turned it the same of humor now The killer gasks, no the traditional biding the boards off view

Salazar is pushing papers around on the while He looks rack. Linder he dark complease I can see an unhealty greenshi trace and the blood vessels in the nose have good shape clown here, but Salazar looks warse than most. He's been daring wirahi

and a looks had on him. His unforms are all creek They ve closed down all the commissames and the mills, and in a law years well to club, but no one will listen to a gook, and contwhen the subact to chickens "Wol?" hell of a way to start a debrefing. Three wears vineger very conact and military but even the Maie has no time left for deporum now What happened to Rolins? 1 ask

Doctor Veronica Jacobi is sealed read to closes here but stros Graham Devicers werd towney " the says, professionally "Most Wally

I nod Old story Sematmes the chickens

Not that we ve noticed. Sefarar says The answer I expected Rollins had got

GUarler his dark complexion I see a greenish tince; the blood vessels have burst beneeth the skin of his nose None of us are in good shane bere, but he looks worse than most?

ten report with some ignorant grunt of a foot solder in the army of Charles XII 1 had invent to tail the boy to stay away from Polspot-though comp to think of it it had to be something quicket or else Rollins would

Facht, Maro 1 say leady He halos to be called Meia though not so much as he heled him Us killer geeks are an modant lot. 'It's bit I been pushing too hard. Benet thirika

your influence grows on the host and the shares rocks to me. Woll scrubbed and bill and paim and even thendy and above all

it was known that she'd focured prominently in my masturbation fantesies ever since we'd nto the Cracker Box with thirty-two man and

Creaper liked to contemplate her, too He even bugged her badroom to watch her m action. She repear know Greeper had a taland fey that shift and held the up these time own than everywhere. He said that if he couldn't live life all least he was going to watch when Planna was entertaining this radhared Captan Hall burton the field of base security and her fells in those early days. I antiched yeah oot to corless that I watched But attenwood Lippt actory Told Greeper he them. They make us say on our hosts he geek Turnsbout is fair play." I told him it was different, but I not so med I couldn't explain country the fittle attents but it didn't marter back Big strong Capteri Haliburton died. hookup is all in place from lime to time live thought about going in and taking a neek me with my taxiasias and my wel chearrs

I agh and gave them whet they ward

tableh seport with Japentorn," he arum bles. What a fusile whereir He knows that's

You takes what you gets " I sell hern "If stop at Jegertion?? Why not Cronstod?? Hell

Has note Maps. Veronica says. "We

Salazar is still unbiappy He s a military hatorian by trade. He thought this would be rethonal Warnust reach the knythourse Your

You knew the job was danoprous when you look #," I say A killor geek auoting Su

The Maje scowls at mo I yown I fm tred of the lister "I want something to eart. Some too cream I want some tooky toort is a case to



cell and Loose back wereby or constructions of occurs lose thermal and occurs lose the term of the construction of the cons

Nam was the fast we lost. Old they have to cream in St. Peramburg back in 1977 I hope they did. Thope she get a boal or two before the deed.

Mappor Saturce is set lakeing i resitive He been halong for anno time." ... out lest classes row." To a superior that the protection of the set of the set of the set of the term of what we are daring here, stose it has upperformed to change secondary and coming on experience and the set is establish we that haulant the world to week the here of here to other and the set of the set of the here to be an intervent of the maps. The Map here here the set of the set of the here of here to be it.

It was all Graham Dracker's deal the test chinosi to with the war or maybe just save outselves from the plagues and bombs and the potsoned winds

But her Maar wers her hastnam so he got to pick all this largets were the computers hed done her probability analysis her has as operak. And he got gis thom Nease pomts' has alload am Christel ports in her with CI course one ware batter take ofain Rohme ports Geet Nachsen War. Nan of her Rohmolen. Chargen got be politice of her Rohmolen.

There is non-reason to the seeking to use content that seeking to the control content that the serving it is the control content that the content bracket great muleral or content that to chief bracket great mulsetity outrimmediant to chief bracket as well to end the serving the bracket as provided to the service of the service of the content of the service of the bracket of the service of the service of the bracket of the service of the service of the bracket service of the service of the bracket of the service of the service of the bracket service of the service of the bracket service of the service of the bracket service of the service of the service of the bracket service of the service of the service of the bracket service of the service service of the service of the

If i could just lug back a history text and let him rest what they say about him. I'm sub hed jump through farming hoops.' I say



COMFORT COOLER

By the gloss, 2 ac Southern Comfart, 39 large fresh time. Hankla grapetruit juice, Pour Southern Comfart over ice in o tall cooker gloss. Add juce of time and fill with grapetruit juice, string gently Mellow for half minute as trast builds on gloss.

By the patcher FII a 32-az, pitcher with ice. Add 6 az Southern Comfort and juce of 1½ fresh times. FII with gropefruit juice, and stir gently. Mellow until frost builds on outside of pitcher.

For a free copy of Southarn Comfort's newest recipe guide, please wille to: Recipe Booklet, Dept. GE Box 12427, St. Louis, MO 63132.

Now Nikon lenses look even better

NIKON LENS RE	BATE
Lens	Rebate
24mm f2.8 Nikkor	\$25
28mm #2.8 Nikkor	\$20
55mm f2.8 Micro Nildeor	\$20
85mm f2 Nikbor	\$25
105mm f2.5 Nikizer	\$25
35-105mm f3.5-4.5 Mildor	\$15
Nikkor	\$20
70-210mm 14 Series E	\$40
80-200mm f4 Mikhor	\$25

We're offering rebates on nine of our most popular lenses, from wide angles to telephotos and zooms. So you can get the lens you really want, instead of settling for a brand you don't.

Just make sure the lens you buy comes with an official Nikon Inc. Warranty Application, and get a rebate application from your dealer When you send in the applications, we'll send you a check -along with your Nikon USA Club membership,

Of course, a rebate offer alone may not convince you to buy a lens. But it might help you to buy the right one.



to chattle Missa Ine CEA products For the wire characteristic Missa Ine Caraba Cao WY 2023, Gibe por these Caraba Cao WY 2023, Gibe por these O'Near 12, Dru

Ive had enough of this "I'm tred." I annourise "I want some food " Subdenly for no apparent reason. Heel like crying. Twans anymore you hear? I want something to eat Salazar clama, but Vierrata beevo tho

she gave to me, and to the Maje. We vo accorrelished all we can for now. Let me get him some food " Salazar grunts but he classe not object Variance wheels me sway to-

Over stale coffee and a plate of measury meat and overcooked versetating size coosoles me Shes not half bed at it a pro after all Maxte, in the old days she wouldn't have seen the did magazines. Evan down here tapes, our old novels, our old monent alburns our old turny books. Nathing new cl of a movie, maybe reading a paperback at the lifes to live beck than below they account up everything. So I know all about the circl an't up to say. Bo or Martish or Empire or Garbo Still she's provi to look of than area And the rest of us don't ourse makeum up other Creeper ween't no Groupho no met ter how hand he mad: me I look ast like

push my fork away with the most only

Wronica lauchs "Youre lucky You get to 13520 6. For the read of us, this is all these is 1

you never had?" I'm aick of takeno about a though-sick of it all. Want to play chees?"

She smike and gets up in search of our about a dozen chess players down here m the Gracker Box new that Graham and Crisider are gone I can beat all of them ex-cept Rome. The funny thing is, back in 1956

Think's more to the game than book openings. ' Valorica says, and I realize five been taking aloud

Tid will win." I wast "Hell shose gays have been dead for centuries. How much fight can

She amles and moves a kright. 'Chack

Screday live got to learn to play this game." Lasy "Some world charmon

Veronical begins to put the piecos back in

the box. "This Sveeborg business is a land should make against Cronsted??

if I know I suppose the Mare has an idea."

She nods Her face is serious now Palm

What would it be like if I ded successed 1 worder? It I changed something? What would happen to Veronica and the Maje and Pale and Sim and all the rest of them? What course, but no one really knows. Tim a deedesperate measures. Being sublie sure hisn't done cliciblysquar, Let's hear it. What pose his privates on the battements? What?

I'm dubious "Maybe it I work "I say "More kely it I not Benct slung into the despest goddattined dungeon that piece has They's really think has not a Ukperhorn might wat shoot harri outright

No alle sites lin his pan way Jooor hom is an idealist A man of principle. It is chancy but you don't win choss games without laiving chances. Will you do in?

Mighties well "I way "Gan't dance "

shall be allowed to dispatch two other by the southern road. They shall be furnahed with passports and safeguards. at the siland of Lonan, so th of April 1908.

The draning of the officer matters the agreement stopped suddenly, and the staff

Woo Admini Cronitlact row slowly "The penious postion, it is befor then we could to attack from all aides because of the ice a large number of fugitives who rapedly conmatt have demanded our immodate surstead we have been allowed to retain three the-line arrive to aid us before the fried of May It Sweden fails us we must summitien ate truce will provent any further laws of the "

event the Swedish ships do not arrys on time. we must make plans for an orderly sumander of the carrison 1 He loundhed into a dei-

Bendt Antionen sat quietly He had expecket the news had somehow known it was that Cronetect and Jagemorn had negotiand a classer. It was toolet: If was charged render of Wester-Svarto, Langörn and Oster-Lika-Svartö, the rest of the gamson to rightes month. History would revie them Schookhildren would curre their names. And

When the meeting at last ended, the others rose to dopert. Antionen rose with them, dolermined to be silent, to leave the room rauetay for once to let them sell Sveeborg for thaty preces of silver rithey would But as he tried to turn, the compulsion second him and owhom impered. They both watched him anormech in their even Artionen thought he

"It is clone," Cronstect replied." jact is not open for further discussion. Colodutes " He cimped to his feet, furned to go nen blurfed

Christialt stopped and looked at him Admiral you must lieten to me. This provisign, this agreement that we will retain the fortuna if five shos-of-the-line reach us by the fried of May it is a freed. The ice will not have melted by the third of May. No ship will ter able to reach us. The armeters ametered Sveaborg's harbor by noon on the trad of May General Suchleten will use the time gan control of the size approaches. Any ship der benyy attack And there is more The messengers you are sending to the King sin they-

Convertisities have was see and granite. He nei Jägorhorn arrest thes madman" He gathered up his papers, salusing to look Antionen in the face and strode anonly from

"Colorei Antionen, you are under arrest Jepenhorn said, with surprising perdensist in this voice 'Don't result. I waith you, that will only make it works

You will not laten. None of you will leten

Ithink I do, "Jegerhom sec

Artionen nached out and crabbed him

You do not You think I don't know what you are "liggerhom? Youre a nationalist dame you This is the mest you of reconsiism You and your Anjala League your tamined Fatrilancier noblemen, you're all Fransh nationalists You resert Swadan's domination. The coar has promised you shat Finland will be an autonomous state under

his networkers so you have theory off your

Colonel F.A. Jagethorn barked A strange meneretran flademad agress has table before know that' he said "No one knows the

Antimose shock him books. "History is going to laugh af you, Jagarhorn, Sweden will jow the war because of you because wish Finland will become an autonomousstate under the caar. But it will be no feer than if is now under Sweden You'l swap market for the butchers of the Great Wrish.

A a merket for fleas? What is thet?

Amongshiel "A flee market a flee Liter Listew" he and He released Jagentern, turned swisy "Dear God 1 do know E is a place where things are sold and traded A fer if her potting to do with fees, but it is full of strange mechanist

6The machines suck away the liquid right me, and I'm screaming so loudly that he draws back, and I give him a geekish smile, rows of rotten teeth 9

strange amala." He ran his fingers through his has fighting not to scream Utagerhorn. my head is tail of demons Dear God 1 must even as the French gri Joan, the warnow meet 1 know the things that will come to pass "He koked no Jagehoms eves saw the fear there and held his hands up anintelling row. It is no choice of mine you lesse, but the whispering continues and my doing yet they must be sentifice a reasion. they must be true, or why would Bod fortune me so? Have mercy Japathom Have mercy

"Yes." Jägerhorn sakt. Voices like the French carl 1 did not understand

Avenuen shock his head. You heat built you will not believe You are a passof you your dreams They remember the Great

have you as well And rater Cronstedt. He will be revited by every Firm, every Swede, for cerentations. He will live out his life in this stpend, and he will die a broken man on Anni 7, 1620, teraivo years and one day after he ments with Suchteien on Lonan and promased Sweatborg-to Russia, Years later, a man named Bungborg will write a series of more about this war Dowtu know what he

"No" Japamorn said He smiled uneasily

They have taught me the words by haart." ased Bang Antonen He recited

they abrank in time of single.

cellines Affection Scott and Sm

and Death and Driverway,

but membrat not his former name. lost they should bligh who been the same

"That is the nions you and Cramped) are terly 'That is your place in history Do you 100 t'

Dalonel Jagethorn had been carefully odging around Antionen, there was a clear neth heteroon him and the door. But now he heatstad "You are speaking machass," he and "And yet how could you have known have me believe you Voices? Like the French

Antionen sighed "God? I do not know Vacus Japentom, tratis all hear Perhaps

Jagerhorn grimaced "They will revie us nounce us a poerra?

Antonen said nothing. The machess had object he was filled with a helplass decoar No." . Branchorn insisted "It is too late That

agreement is signed. We have staked out honor on it. And Vice Admital Cronstedt her is an uncertain. His family is here, and ha masterfully and we have done our part it connet be undone. I do not believe this madin time Savatorio must vield, and the war must and with Sayden's defeat How could

The alignce will not leas," Antonen said with a rueful smile. The French will merch on Moscow and it will destroy them as it do

"I is too intermen now" Japanhom said Nothing can be changed

For the first time. Bengt Antionen fait the treast gimmer of hope "It is not too late

What course do you urge upon us then? Crostelect has already made his decision

whether we take part or not. It will fail

Bengl Antitonian lifted his hoad stated Ji-

HEALTH is as simple as following NATURAL LAWS



Concept-Therapy® Teaches the Laws of Health and Happiness

EXERCISE 2 NUTRITION CONTROL 5 RECUPERATION CONTRACTOR CALL OF WRITE

Concept-Therapy . Institute TOLL FREE 1-800-531-5628 Deut.0-10 25550 Boerne Stage Road San Antonio, Texas 78255





Now the margazine of the luture Custom Bound Library Cose made builto ibit and f willkeep 12 million OWN loop and in each paie them is a calid transfer for excercinics

Send your chark of postage and handling per case) P.O. Box 5120 Philodelphia PA 19141 -

Allow 4 & works for deliving

gettom in the eyes. The agreement steps Swedith ships may be dispended on time

Prou have Crocsladts eer. See that I am

You? Jagerhom looked doubthul. What

Tican prove my voices speak true. Art

'I will meet you tomorrow at dawn at Ebin the place of one of those chosen. He will

Colonel Jagerhorn rubbed his jaw. conadating No one could know the choices

They shock Jagerhoin turned to go But at the doptway he sumed back "Colonel Antionen" he said 1 have torgotion my duty

see that I am richt

"Perhaza " said Jacentom, "but far all our sakes, I shall hope that you are wrong

and the machines suck away the layon his face. I give him a broad, geeksh smile. mus pointed unlow rotten teelh. "Get me out of here turkey' I shout The pean a a as had I can almost stand it. This time the

They give me my shot and lift me into my orkers lead to an the old days when Categor was around to race me Theres a bit of a problem with one ramp and they catch me there the strong silent crow in their

"So chan Salv. I say life good news Bengt psyched out Jagethorn good 1 Helese me I think we got 6 socked I'm meeting Jagathorn tomorrow at cleven to

Cronateck is going to try and send to the once I say the megic words the duck will

This is very obscure information." Sala

Pannie speaks up for me though "Mean tonion. If was your job to research each of one in what remains of Sweden Tidon't care ton. The entire works Our past and our fu

She turns to me I applied She strikes.

Sure I say "It was a proce of cake With ice cream on too. What d they call that?

Sveaborg & ta mode. I say and I serve Okay' I say when i'm done with the report. note? And I cell the massage through some

"It's a figure of speech." I say with un-

The Main rocks 'No ' he says ' The courere--- its true that General Suchtelen led and The use matt have melod after all The the ice around Hels insidial not met unit will well straine. The attain a settled, and was in

Teachery?" I say I don't like the sound

For a second the Maje's ands looks of most genune, hes linely it on comething 101 Sucheelon?" I monut

Use Antonen Fillhem with race Have

hm chav his weepon. Kill Suchtakin''

I see A new move in our crosstime chase game. The over gambd

You can disengage Salazar save Maybe they I tell him test " I paint out

ther loss for our nation. This is war " The Main finances "Your success may cloom us al When you change the pest the present is in your desits may create to exist, and us with it. But our nation will live, and mittore, we have lost will be restored. Healthier, hap per versions of curselves will enjoy the rich isers that were claned us. You yourself will

"Ortalent," I say "In a which care I world be able to go back and do this in which case

the past slava unchanged ' The paradox does pot apply bare You the The past and necus And it will be Anteren who effects the change not yoursoit He is of that time? The Magua moders.

horse you rack in an don't get it I could I'm better ott dead

Weignigg has been Istening intertity Now the lasts across the table and touches my

understand, she age "You dentity with "He's a good man."

I say Do I sound de-

tensive? Very wall that, I am delensive. 'I feel bad enough that I m driving him around the bend, I don't want to get him killed. I may tanak, a cabok, I've leved my whole like under segs and I'm going to die here, but Bengt Orion he data out of Sweeborg, there's a

"He has been doad for almost two centurnes. Salazar savs

Team in his head this afternoon." I snace

He will be a case alty of war " the Man save 'in wor polders die it is a fact of ito.

Something else is bothering me "Yash minube, he's a solder. I'll buy the life know 143 DMN

he cares about honor Sally A little thing we've torotten To die in bettle, sure but you want make that a good wroad assassiv have him violete a flag of truce. He's "The ends soldly for means," says Sola-

sachantly, 'KillSachaler, kill him under the with more recent to culturate of tomose more Succession the will shatter the truce, will an attack that Sveyborg, impregnable as it is, will easily repulse. Russian converties will th oscial remains will not survival Bonapartels lared as the French restoration, and Russia wil evolve toward a liberal parkementary

Salazar gets red in the face. That is the computer projection. he insists He locks away from me, though Just a quick little question of the train but I catch it Funny Ha

Varance sources my hand. The projoction may be off, she admits '% attle or a lot But it a all we have And this is our last

> torren really I do Ito been part of tim for hite sharing IT OF YOUY RESOLVEtions do you credit But now millions of ance, against the life of this one man This one dead man la's non in all history peryou alone." She arming Think about it

When she puts it ant Ah Bengt Llook torright," I say wearing to Salazar, "the last of that old prowar stuff you been saying

The Main looks startied discontroed Glerilwet and inch Mist

and by what they will see as Putnish reachery Japahorn, with proof below him wil change sales Cranspect, the hero of Sweatborg, behind Russian lines, while a second Swedish army sweeps down from the porth. The entire course of the war will change When Napoleon matches on Mos Petersture. The caar will be caucht in Mosstall a support covernment, and when his re-

and Remy Martin was a wall knot secret. And interbuce heigh ho

"I do not these drunken revolvers in order." Saly says Detending his treasure Hes homely and dumb and mean spinted, but

Shut up and come across," I say Toright Lain't going be denied. I'm gwing up Benut to get shiflaced." I tol him "It's time to drink past and present. If a in the rules, darrn you

Within the central courtyard of the Vargon



citadel Benct Antigaen wated in the new had built Sweathong and new signal sera rely within the bosom of his creation his bones sale bohind her guns and her grante wals. austrood by all her clauritics mucht. He had stood so note would come to disturb his

The word was blowing it came howing down out of a black empty sky, stimpd the the stars were lading. And his head was empty echoing, moderin, Light would spon break over the hoszon and with the light have nothing to say to him

He heard footsteps Jagethorn's boots foot spart corepretors huddloci against the

steamed in the frigid air. And sat as he was about to succumb to the emptiness, about to admit that his voices had laied him.

There was such a long stonge that Arts forten once again becan to lear. Was it madhe been wrong? But then Jegerhorn looked down, Irowning, and clapped his ricked hands together in a gesture that spoke of traity 'God hep us al, he said 'but I be-

These already broached the subject with Vice Admirel Cronstedt ' Japanhom said "I not beer inaction who must always be doing something. You disserve more then anived and disprace. I have argued As a counter inter Synthetic we will also remove a warrow is converced "Japanhom smiast warrly 1 am matshal an argument as Bonaperte mar-

Good said Arttonan Why did he feel

whill purpose do we consoling?

FREEE HEATHKIT CATALOG HEATHKIT CATALOG HEATHKIT CATALOG HEATHKIT CATALOG HEATHKIT H
Interviewented in the latent in high lach Please seed in a PREE Hearthet Califorg Send to Hearth Company, Dept (39-342) Bentin Harbor, Mil 46022
None Addwaa Dry Bode
676 ZP
R AA





You Can Influence Others With Your Thinking

TRY IT SOME TIME CONCENTRATE IN snother Do you maker how much of

How many times have you washed thank were some way you could anotess another favorably-get across to have on

This FREE Book Points the Way

The takes of mitacalous accomplish known to be fact-not fible. The a Religion)

The ROSICRUCIANS (AMORC)

Surber KDF The Rosenses San June Cold	en (AMORC) anna 20181, LUNA
Please send re back THE &	CAMPAGEMENTERY UPP of # INSTLEY OF LEE
hdónu	
hdirus	

"I will not buncken you with that knowlodge" Antonen repled I kwas knowledge he laded henned He maak but he outure he had known that anos ystandag, but he will of a tal diaded him and the later was as obtig as the store of Environment both a strange foreboarding in sense of isomosphare foreboarding in sense of isomosphare doorn.

Very well " said Jägerhon " I pray that I have acced wisely in this. He serroved has given, othered his hand. "twill court on you private weldom and your honor."

We hance? Dengt repretent Slowly hoo slowly he look of his owing been to shale the hand of the oldar men standing three before him. Dead men? He wais no clear finant. No was live warm look. But it was fingel three under those base trees, and when Artabalan based Jagethorms hand the other's skin list cold to be trough.

We have had our differences ' said Jagenom, "but we are both Finns, after all, and patrota, and men of honor and new too we am freeds.

Theredu, "Artisonan repeated And in his head, isoler han is over hist been before, so clear and strong it element altinots as if comerces had spoken befored him, come a willipae aid scriethow and befor Crimon Chicken Linky it such shake heads with your per if the post.

Gattery or four Access white a may for mer shall hyra, and the store open with the real hyra, and the store open with the store open and the store of the human the work the store open, or one as wait store (the high ball the the the store of the human the work the store open, or one as wait store (the high ball the the open ball open the human the store open and the store of the human the store open and the store of the human the store open and the store of the human the store open and the store of the human the store open and the store of the human the store open and the store of the human the store open and the store open and

They and is posed to know, volucity, so reports is smoot limit and the Maja and liberati Las the world is of to be a flat world by the start of the start world liberate start of the start is not the start between the start of the start is not the start between the start of the start is not the start of the start of the start is not the start of the start above, surrounded by investment little rooms, and down at the end of the corridor is a most surry guard, pissed off the his ant out there getting a last balls, whole got for keep me in and the list of them out

These set of heavies literate mell come try solviews to sense and dark of and order the try solviews to sense and dark of and order dark of the solviews and the poddarmore of the the poddarmore of the poddarmore of the poddarmore the poddarmore the poddarmore the poddarmore the poddarmore the poddarmore poddarmore the poddarmore poddarmore the poddarmore poddarmore the poddarmore poddarmore

 The wind howled out of a black, empty sky, outling through his warmest coalt; or perhaps it was another sort of chill that hay upon him, the chill of fear 9

and the proposed of the propo

champon is temporal evide that time. Johnnosis is a curve, daming pare White finderhiwork. I adved Rome with if we lake out Roeses and water Hister with Work Wert is on we wind topologie with Nein Cammarky O' Engtand contained the Cammarky O' Engtand contained the Cammarky O' Engtand contained the Cammarky O' Engtained and sourt Their supersonal Automatic Hungshite which the Cammarky I and a contained Hungshite which the Cammarky I and a contained Hungshite which the Cammarky I and the Cammarky I and the Cammarky Hungshite which the Cammarky I and the Cammarky I and the Cammarky Hungshite which the Cammarky I and the Cammarky I and the Cammarky Hungshite which the Cammarky I and the Cammarky I and the Cammarky Hungshite which have Cammarky I and the Cammarky I and the Cammarky Hungshite which have Cammarky I and the Cammarky I and the Cammarky Hungshite have the Cammarky I and th

By reading darit make me no promotes, taktions lists the could co was many and him months physical an intern This gay was apply to get his lists and could be promote himling that of help gaven a year. In this takling that of help gaven a year, hell taktions are provided by the second beam of the for some proper, maybe help a helme to bit apply tak-shall apply when it this, you cant gave to home to tak. So the gay any, well it differences out has been to bit of any any end with a long time, all knobe of this procession takes to be the differences out has been to bits.

I'm too damn drunk, 1 am. I am. and my all of a sudden I got to see her I set down row, and i wheel myself out into the consider. with/ I know him a little bit. Security pure has black fellow name of Dex. "Hoy Dox." I let's up no party I want to see 11 Ronne He unt looks at me, shakes his head "Emon." I say I bat my baby blues at ham the woods? Hell no old Dex savs. I got my Im mad as hell, the sent tax I want to see Bornte, I pather up all my strength and thy to whool right by him. No cigar; Dax turns, blocks my way, grabe the wheelchair and puttes I go backward fast spin wound char it hurts Goddamn it hurts. If I had a name I would abloaded if i bet "four new where you are you fucking thank. Devicely me I start to cry, damn him anyhow and he waldhes me as I get my char uprofit and He stands there stang at me "Please," I say lingly He shakes his heed. 'Go cel her gress "Shells busy," he tells me "Her and

Creaper's room is the one beyond mine the last one at the end of the hall. Evolything is sail like he left it. Larmon the set, play
notit at this particular minute, it takes me a while but finally I get 6 and 1 ump from scene Status as served up by Greeper's clever chost Each scene has its own individual community not contop of one of the tables. are but they keep at it staggtring at each other bandly swincing huge awkward faits. a perit, leaning up agend my collin. Sam thinks it d be easier to sust bests my head in. Maybe III cross him off my Christmas list Fortunatoly for the geek, both of them are trially a little rejuctantly I go to Roman room Heigh ho, as Crooper would say, what'd you expect rest/2

Locald ret love thee, dear, so much loved Lost honor more. She walks in beauty like the right But she's not so pretty not really hack in 1606 there are lowder women and Banglis just the man to land em too although Jägethorn probably doos even bet tw. My Vercracas and the queen bee of a compt posoned twe thats at They're done now They is taking. Or rather the Majo in takene, pless his soul he's n'n his mecream litary, he's just been making love to ing about Sweaporg, dame ham " thety percent chance that the massacre will paths ought to come together acam. Good hundry spared and now she's moving lower mmy fantases, and now I don't want to watch

General Suchteien bad redaktished his another clever ploy. When Sveeborg turned TI2 CAIN

windows, across the white expense of ice them Finally the inner doors opened and the clark Russen caption emerged "The

General Suchisten sat behind is web wooden desk. An arde stood by his right arm the other by the northern route Suchalan said something in Russian the aide proweied, and fresh mounts would be available for them along the way, orders had been given Annonen listened to the decusion

6A rage filled hwn, an anger so fierce that the world seemed to flicker and worsh: he was somewhere alse. he could see naked bodies made of pale organ blocks

sense of disceantation. Suchtelon was dong rerearnely lost and listless. He had gon was to do They handed him one of the sale conducts placed it in his outstasched hand Perhaps it was the louch of the parter, perhape it was something else. A sudden sed rage filed him an anger to living and blind the rage still hot within him, but cooling now

have slopped him but he had caught them motion. Bengt wondared beefly what was of the way out now the heard the captern shoul something boland him the aide bethem all, heigh-ho. Ho grinned, spun the sword in his hand, and offered it, hit first to

soil say with remembing approaching away centom suggests that you hold up our passage Tempose Datan us here and you are third of May in such a time the long might

The translator put away his patci and be stratige weakness, when his stomach monister dying far away in a metal coffin full of right and then there were none heighho one agos was ending and another would He thought file was the beginneng of a pened to feel like it, but held do it his way

Atteratime Suchalen nodding reached out and accepted the proflered sword

Colonel Bendt Antonian reached Stock helm on the third of May in the Year of Our

At the cooclusion of hostites. Colonel Actionen researed his commission in the to England and later to America. He took up red tabered nine childron, and became a respected for his carry ability to serves coming livings. When events proved him wrong as happened strinequantly Artitionen

In 1657, a year before his death. Antionen phys begraphers are fond of quoting OO



GET LOST!

An inland penduc that offers you near relaxation pins the hell of discovery. Straff prusine beaches Go history for he beg oness. Sam yourself by our peol or subia m waters renowned for the splender of their tropical hell the hell the shares in laurenza busen, all the choices are yours.

DUT JUST FOR A FEW

Districts lowes are proven the alamin and we think you will, now So we're put out the welcome much but colly for a few or a time will take up to 12 guessis, for 7 means, which such as 4 means, ledging and a second emp flight between lowest welcome income and the second emp flight between lowest welcome income and a second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp flight between lowest welcome income and the second emp in the second emp is the s

For micensecon please write Neel Dragias, Forbes Magraine, 60 Fifth Ave., New York, NY 10011 or call 232/620-2461.



America's most popular boot styles. Now at savings up to 30%.

You won't find lower boot prices cast or west of the Peers And Way Out West has more boots under one roof than a coyote has fleas Men's and lades' boots, in sizes all the way from %Avo 13EEE 15,000 pairs in all? Way Out West has been

way Call west has been selling top-north boots for over 18 years We personally guarantee your susfaction on each and every pair.



ANSWING TO DAMAGE THIS		
ALPHANETICS SEVENADOTION SEVEN = 30807 and FORTY9 = 215849 ANNVERSARY SOLITARY 32900 SEVEN SEVEN		
1900/0504/140 1620 5770 8029 5771 11142 3890 8006 17914 × 9004 17910 10001002		
48		
SEVENS QUIZ		
Charles Brosen New York a Seventh Avenue The symbol above 7 on a typewriter These letters carespond to 7 on a tele- three letters carespond to 7 on a tele- three letters		
5 A memory and name for the seven colors of the spectrum red orange yellow green. biss indigo vollet 8 Canal Zone 7 086		
8 Australia 9 Elizabeth Taylor Hilton Wilding Todd Febre Burbon Burbon Watner 10 Seven Days in May		
11 The Seven Figure Care Sociation 2 The Seventh Seriel 1807 directed by Ingrara Bergman 14 The Sevent Faces of Dr Lao		
15 Baanful Doc 16A Slayton 16B Cooper Glenn Schurg Shepend 16C Schurg		
17 Ars for adulting and pothblion against adulting at the Selection commonstrent 18 Throwing outther les bail of the season 1910 (The adulties of the Table Hote) in New thisk incidentially in 2775 Sevent Avenue) 19 Seven minutes was said to be the time in takes a verna's to haldh organit 20 1100		
CREDITS		
Page 40 bottom lade Standin Socianti, La Permanent M.		



Nothing less than Holland's best."

Internative Science Important, Inc., Marris, SA 31,004 (1997)

The parcetes in the Ansiehalin Lutdry echost involvential in the "Newtes and Thirtes compositived the value of valued apponances cooperanting in group play digeting the experiences—both psychil and parthum to do play basient with tooks parange methoding, playing the durits and tampoor methoding, playing the durits and tampoor endoting, playing the durits and tampoor endoting the initial waters and tampoor the forechas play waters.

Tables are used in Annexa Motteson actuate in Annexa Motteson actuate in day-cate centers, and in the Head State programs for low-correct learning. They all proved convincing if that children given activated convincing that children propath encoder promotions in the well ywares profit groups. This has been amply demontations of the promotion of the well ywares path encoder and activity contract and adpathered ratio works of activity works of adverse other works.

This advanced should have prescreeprogram both and consider a sever-facial, isolargo because it is crucial and i reflects insolargo because it is crucial and i reflects the dimensional selection of particle and the child a message in seriors (begins by the final and the Montescon system issues by the result insolared particle and the tapp of and includer message particle the tapp of and includer message particle the ability of selections and the Montescon system issues being the advantes and capacity particle are becaused in the particle and the ability of the selection and and the beside of the selection and the beside the beside particle data many account and participations the advantes and capacity of the besides the selection and the beside the beside the selection and the

The photophy of the American currentphoton involvem learch carries challent only use binomparties, where include the photon learning and the second second second to the second second second second second to the second second second second second biddes biornal actioning. These are second biddes biornal actioning, these are second biddes biornal actioning, these are second biddes biornal actioning. These are second biddes biornal actioning, these are second biddes biornal actioning. These are second biddes biornal actions and the second second biddes biddes are second actions and the photon second second second second second challent was begins reading of 2500 performs that biddes biddes these second second second biddes and the second second second second conductions biddes are bidded and the second conduction biddes are bidded and the second biddes and the second second second second biddes are bidded and the second second conduction bidded actions that second actions are bidded and the second second construction bidded actions that second actions are bidded actions that second actions are bidded actions that second actions are bidded actions and the second actions are bidded actions that second actions are bidded actions and the second actions are bidded actions are bidded actions and actions are actions at a second action actions are actions at actions are actions at a second actions at a second action actions at a second action actions at a second action a

Vie come to all of the above operione-orbaset-because i can't beleve in basing children down with schwies that don't have a cheer value. More important in onevineed that can society puth an escatation above no operative schwart and that of come and bot this on operation assistements, unstagogy and metable spent in many of our tembes and can high sales of churces when and ched above and therma successions.

Eelese we could make a much happen and more stable scorely by stressing fed competition or meterelism. But cooperation and knothnese. These qualities should be pleased down from generation to generational our materialism has been 1 belowe the group to start with we can tables and small chicken. The time to start is now DO

INTERVIEW

COMINATO FROM INCE 19-

row tormat point of view is not concerned with what facilities children have about earning to read and write. The naily important thing about learning to lead and write is lownor if

Onny What about the tenor that computers will do away with our imational side?

Papers: That is like putting rapin racify sites and calling thereing the site of the site of the call construction of computation as herein that's year model of it than all those fears are understandished of it than all those fears are than paped in educator mark those for this speet of the computer That's work products that speet of the computer That's who is eucular products seems focused on marking a wear of the computer That is marked as the computer that the construct.

Orm! Do humanists have anything to load

Pepert transients may be rearry the casestant of the computer adaptive to the accrossstant of the computer adaptives in 1994 posteme. This computer numerical ways and the less sign and technocrose if the humanski mover node appropriating and monitoring tim the mage. Thate's a vecous code. The more the computer culture pass against the gam, of the humanski are regorised by it. So they withdraw and it davelops in these direptions over further. Everything I am doing is to any to open the closes of the process of creeting this computer culture to the greatest maintee of people.

Once Why do you had the classroom is an indirectual environment for learning? Paper: The classroom is worke or befor do

Pages The observation is extend to Staff and Market Television and the staff and the s

Once You have called for one computerlike one penci-for every child is that a percent of a weight con?

Papert Obvously computers can do a lot of coociet a lower ratio such as one for every



two or time students. A computer for every child means that a child can take in home or carry a anound. The sigurater for having a computer to every child is very strong—in the United Basics we can constrainly allord in without batting an eyelid. One weapons system weak one for all of them.

Omnit. What kinds of cultural changes will computers brind?

Paget I we had very moving expensions with chidma and computers. These costs when the chid makes well discovers, when the child redecovers zero, or when there are meringful, connections, between people who wouldn't of the wear propile.

In one how tool City public subset (in comparise terms and a cited wire last incomsistent term and the setting of the a dancer and taptase call targets and the setting of the setting

Grear Do you think the computer will help to integrate the works or at least reducely break clean between by communication?

Others. What then is the most important task lacing you?

Paper To understand more despity how calman a generative central collare in particular can be mailable and texporewato indevail and collared differences. The form in this taken und read with the targuages individes the doctomain mailand, even the way people while about comparities theories and paper and about comparities theories and paper and about comparities theories and paper and the tomortowin. This collars the doct comruption theories and the doct comparities theories and the doct comparities theories and the doct comruption theories and theories and the collars and theory condem CO

K0 CMN4

PROPHET

CONTRACTOR NO. 179

26) Boades telecorreturisations, what will be the primary uses of orbiting satellities in the twinty figs century? (Choose as many as apply).

- a meteorology and Earth sensing (observing crops, mnetal deposits, and so on)
- solar-power receivirs/transmitters
- laser weapons
- d fueling stations for shuttes.

27) When will an ordinary person be able to have a min on the scalar attable?

- n Per 1935
- h. by 200
- 1 1000
- by 2078
- 0.0.0111000

26) Approximately how much will such a round-trip toket cost in the shuttle's that year of commercial operation?

- a \$5,000
- b 515 000
- 0 \$50,000
- 4,550,000
- EVELON
- 4 more than \$100,000

29) Which nation will be most powerful in many in 20107

- a Lindard States
- h Smart (min)h
- e Jacon
- d European controllary
- e Chris

30) Which planie or hosverily body will be senal constrained too?

- IL VALUE
- b Mars.
- Furges, one of Jupiter's moons
- d, the moo

162 DMN

e semiorrano wil never come to pess

PROPHERTY OLI Z SCORECARD

Here are Chruck Narger's answers. To arrive at your Omix Future Duckent: could the number of your answers that match his, then look an user's threaten pathle

1.8	8.0	
2.0	9 b	
3.6	10.0	
4 b	11 C	
6 d	12.9	
6 b	13 o	
7 d	14 d	
5 h c diGanyou	real a terd of a	port N
each correct ealings	190.)	
16. a. b. c. (Give you	rset a fird of a	point fi
each correct respon	1001	
17 a b (Cive yours	ell half a port	for end
correct response.)		
18.0	22.0	
19 b	23 đ	
20.4	25.8	
21.0	25.9	
25 a b c d files	where the second	artor of
Co d a ci a cara		

29

before subjectively our one cancer and the operation of the subjective process of the subjective proces of the subjective process of the subjective

We have provided here a brief analysis o your score. Check the following three calo goings to see which one applies to you

O to S' Take Me Back to Kitty Hawk.

You have yow score into only in correspondwith Hospe build do with the Correspondnagement two conclusions. The LLIP postphylip is have one counter the LLIP postphylip is have been and the counterpoint postpart. What score occur also be explained by your urbracket coefficient. You rend to separate what you read in novely formwhat may actually occur III you related. Believe hall organize with who place score. The could be optimized with place place score. The could be optimized with place place score. The could be optimized with place score. The could

ti to 19 The High Frontier

This is the range attacked by most of the Cover table. List them processing a good insight top to past, privatil at Collaborati and top top base, privatil at Collaborati and an another them the control top of range of the quarks with the control top of the privation of the top of the top of the top of the quarks of the top of the top of the quarks of the top of the top of the quarks of the top of the top

23 to 30, Gamers Studi

The use attained in high sects on a very diffcuit test. You whow a lot about space and a sector—bath its detailed hetery and the schnological intracence of its future BM you also have negating that the future BM you also have negating that the future BM you also have negating that the future BM you have table to be able to be the values about prevalence to only a future for your any about prevalence to planet BM

EXPLORATIONS

CONTRACTION NOT ST

four hours the divis in the trees seemed to startch on laniver

By far the worst aspect of making the costing observators, however was the invierment inside thatees themelvisia and meanly all the work over the five year period was done during Costa Poats rany seean

These parage models in the set of the set of

Due double the collection where we are to the latent indicated barries of the double of the set of the s

To prove his point. Wilenson made an other trip to Costa Roa and set up is senial of experiments with captive balts, incoso of autom ware related. He set up a simulated anivronment, keeping the balts in dark reveales execution conditions.

In the processing wave allowed warranges by any set of the standard warrange warrange and the set of the set of the set of the relations of the set of the set of the relations of these set of the set of the relations of the set of the set of the relations of the set of the set of the relations of the set of the set of the relations of the set of the set of the relations of the set of the set of the relations of the set of the relation of the set of the relation of the set of the relation of the relation of the relation of the relation of relations and the relation of the relation of relations are relations and relations are relations and relations are relations and relations are relations are

Weak does at this many? If one takens to other bologisk who are transit with Willinsands work. The result cauld be a severing resultation of the 'balogical engine' that drives allowable bothers. One of the gheat values of Weakens with a says Trever. In that he love shown that both in selection and the values of been shown that both in selection and results of a second the low the second second result is sub large inscription second/



PHENOMENA

A Massie Spann proces, he is elisten an engrane have been accounted have been engrane and the second second second and the second second second and the second second second second second second second accounted and second second second accounted second s

Earth will be destroyed in 12 minutes to make way for a hyperspace bypass. Should you hitchhike into the next galaxy? Or stay and drink beer?

Sangh all the disk is your computer and solvely you marktimized, to holis have of the HHTCHINKERS GUIDE TO HEGALANY" able efficience of the solution of the solution density of the solution of the solution data and the solution density of the solution of the solution of the density of the solution of the solution of the density of the solution of the solution of the density of the solution of the solution of the density of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the density of the solution of the solution of the solution of the solution of the density of the solution of the so

SORINK THE DEEK

And the story responds:

Suppose, on the other hand, you decide to:

SEXIT THE VILLAGE PUB THEN GD MORTH In that case you'll be off on the most mindbogglingly hilarious adventure any earthing ever had.

Da Bhildaber V Goda to the pilat ay attorney pilot and the Billot ay attorney pilot and the Billot ay attorney pilot and the Billot attorney pilot attorney pilot attorney pilot billot attorney pilot attorney pilot attorney pilot billot attorney pilot attorney pilot attorney pilot attorney pilot billot attorney pilot attorney pilot attorney pilot attorney pilot attorney pilot attorney pilot billot attorney pilot billot attorney pilot attor You communicate—and the story responds—in full sentences. Which means that at every turn, you have literally thousands of alternatives. So if you levide it might be wise, for instance, to wrap a towel around your head, you just say so:

HARAP THE TOWEL AROUND MY HEAD

And the story responds:

THE RAVENDUS BUCGLATTER BEAST OF TRAAL IS COMPLETELY BENILDERED, IT IS SO DIM IT THINKS IF YOU CAN'T SEE IT, IT CAN'T SEE YOU.

But be careful about what you say. Or one moment you might be strapped down, forced to endure a reaching of the third worst poetry in the galaxy: the next you could be hurtling through space with Marvin the Paranoid Android aboard a stolet spaceship.

And simply staying alive from one zany situation to the next will require every proton of puzzle solving prowess your mere mortal mind can muster. Even simple tasks can put you at wills end

XOPEN THE ODOR

And the story responds:

THE DOOR EXPLAINS, IN A HAUGHTY TONE, THAT THE ROOM IS DODUPIED BY A SUPER-INTELLIGENT ROBOT AND THAT LESSER BEINGS (BY WHICH IT HENNE YOU) ARE NOT TO BE ANNITTELLIGENCE: " TIMY EXAMPLE OF YOLR INTELLIGENCE:" TIMY EXAMPLE OF YOLR INTELLIGENCE: " TIMYES, "AND NAYBE, JUST MY/BE I MICHT RECOMBIDE."



Other informative surveyse factor stories from Informations FLANGTRALL? In which you'r structured and an apportation (severted werdt, FLANGTRALL) for which are passed compared to proport mery SUNFERENCE. On process stories and the second in support restories. June ATEXPT CONTENTS of the stories in support restories. June ATEXPT CONTENTS of the stories in the stories of contents and one of the stories have been applied in the stories of contents and one of the stories in which you explore the factors of contents.

DB Inform TWE ARCONOMICS IN THE SPECIAL ACT IN A BOOM AND THE SECOND ACTION AND A SPECIAL ACTION ACT

But don't panic. You'll be accompanied every light-year of the way by your trusty Hitchilter's Guide, which you can always depend on for up-to-the-nanosecond information. Well, almost always:

ADDINGULT THE HITCHHIKER'S GUIDE ADDUT THE NOLECULAR HYPERHAVE TINCER

And the story responds:

SCRRY, THAT PORTION OF OUR SUB-ETHA DATABASE WAS ACCIDENTALLY DELETED LAST NIGHT DURING A WILD OFFICE PARTY.

So put down that beer, take that towel off yourbead, open the door, hitchhike down to your local asiftware store today and pick up THE HITCH-HIKERS GUIDE TOTHE GALAXY. Before they put that hypass in.

Still not convinced? Try our Sampler Disk which includes partices of four different types of stores for a party \$7.55. If it doesn't get you hooked on the addictive pleasures of Infocom, return it for a fail refund. If it does, you can apply the price toward any Infocom story. You can't loce!



INFOCOM

For more sufernation calil-600.002-6888 Or write to as at hi5 Combridge Park Dr., Cambridge, MA 00260.



By Scot Morris

Lis October of 85, and with this issuecipclared leasily dead. It is the "age of



themselves Look at Barnard's Star, the star to change from decade to choode). The

The number is parvasive in religious

changed its name to the Seventh-Day

Seven is competences called the model comes together---3 7, and 37---and you get

three sevens sigan .777

Instain (seven letters), the fest molecule the biggest ackpots to 777 Gasham Groene

trabed immediately, the swinape number



ANN/ERGATY Herry Network Relation, Roman Bollar of Drev, Sciencel of Reconstruction Mathematics, sends us has original (near) aphrametic, composed wate for the occusion. It as a division (publish that units full and applicability of the eventhere is a minimate), but each given lotter complexity of a different digit, and the complexity of a different digit, and the complexity of a different digit, and the simple colverge receiver.



THE BOLITARY SEVEN in this alphametic multiplication problem by J A H Hunter of Toronto, Ontario (JRM, 10 (2) 1978), the digit 7 appears but once From the legist of the stars, can you put the digits in their proper pages?



A SEVENSIOUIZ

Here's a teal on our current favorite number lidentify these famous sevens

1 Who is the only actor who was in both The Magnatowit Seven (1980) and The Dirty Dozen (1987)?

- 2. Observat shat and
- 3.4
- 4 P09
- 5 ROY G BIV

6 There are saven countries in Certaal America to remember this, note that Certa and Amorica to remember this, note that Certa and Amorica each has seven lotteral Which of the following doren't belong? Guatematic Dettere El Sakadgi Honduros Neorogua, Costa Rea, Conal Zone, Neorogua, Costa Rea, Conal Zone,

7 There are seven letters used in Roman numeral neesage 1, V, X, L, C, D, and M What mystic total do you get if you add up all but M?

8 The seven continents share a pecularity They each start and end with the same leater. Two are America (North and South), and others are Europe, Asia. Alnos and Antespice. What's the seventh?

10 A cold-war move with Burt Lancaster and Krk Doublys (1964)

 Nicholas Meyer's magined meeting between Shoriock Holmes and Sigmund Fisual The tale is donied from Holmess concerne half it

12 A movie starring Manlyn Monroe and Tom Ewell (1955)

13 This move depicted a scene in louteenth contury Sweden with the devil playing cheer for a man's soul

34. A 1964 move in which Tony Randall played seven parts: including Merin. Modeas Per, Apolonus, the Gard Seport, the Aboranable Stewman and the IBe chaster

15. The brothers Jacob and Withelm Grown, in their failable "Little Snow Withe given the horne scene anal companions with no names—the dwarts were simply known as the fail. The second and isa on a wis Well Directly who gave each dwarf a character in his 1958 classic. Of the two dwarfs whose names don't end in y, which one was signt, and which one wore glasses?

16 There ware seven original Mercury extensits announced in 1999: M. Scott Carpenter, I. Gordon Cooper John H. Glern, Wigi I. Greech, Watter M. Schma, Alin B. Steppind, and Donald K. Starton.

A Which of the seven dich't make it into space until 1975? B. Which four of the seven serve named

B. Which /our of the seven were named after their (sites and properly had names thet ended in u.?) C. Which was the netwaterment is the

C Which was the only astronaut in the Mercury, Gemin, and Apolio programs?

17 Natifiand Hewdhome wrote The Hause of the Seven Gables in his other tamous navel. The Scalet Latter Heider Pryme is foscial to wear a red letter A on her cheet. In what way is this related to the number seven?

10 Periodoxiv William Hexapot Tatli a saval to be expenditive for the tradeduce of the soverth remains testich in the baseball. At a game in PEriodoxy, making involution the awarehin remain, be robe and the consol throing he was being to be to breach here leves at borns, the counsed and dwork not the statloan of the "soverth-mining shareh" the statloan in the "soverth-mining shareh was born. Tatli has the distriction of hereing shared two besetial factories. Whe was the other?

19 The Savan Minutes was the file of an inverg Walace novel in which a book tiled The Savan Minutes was on that with a charge of obscenity What was the matching of the Indonal book's tak?

20 There are seven months with 31 days. How many months have 30 days? Answers appear on page 154

IDDATE MUD DUTY

In our August column on puzzle therapy the four precise of the T Puzzle are solid like optioned the same on both sides. They may be turned over

Otivi 10 Quiz Contest by Martin Mach vos Sevael, recently published by McGraw-Hill, is a treasury of high-10 rests, with cash prass to the higher Q contest if son sole at bookshows to do an DD



LAST WORD

What are shopping mails? A way of compressing everything our society holds dear into one large container.? There been a 40 of each tim ging effort a objection in works only methods and any about a warging of hands over out any residence with any first over out having include to learn a method file chain. New clusters, the optimidate is for too durantice trans, the optimidate is for too too.

To my aliad way thems don't WML acade to make add with my right, hemaphane. Acading and exercising it applies, price a anticobation on to the intecompleter. Now implementary a maningue adminishing between it and myself has been so proceeded with the decidery. Low monthment academ.

Their issis bold more wave, nearly the experiming of regiminants, in one of all in bold out invasit weaking out and the set of all in bold out invasit weaking out and formally all outputs nearly gifts. It washout it has forware present of them in USD and the set of present outputs in USD and the set of present outputs in USD and the set of present outputs in the set of the call has been and the set of the experimentary and the set of the experimentary of the set of the output value.

Take shopping male, for instance 19ad

The second factor areas through Dalards and

conserver (the program a bandwing) therearching allow one the company matching and the company of the company matching and the company of the company the glave in (the company of the company of the the glave in (the company of the company of the theory of the company of the company of the theory of the company of the company of the theory of the company of the company of the theory of the company of from the company of the form of the company of the company of the company of the company of the theory of the company of the com

Verweid separatory, all ne activities saint here exain no particuler serial. Builtit sport right force hous in loads, and Tetas sectority downe wright and tripfal will effortunate over bogetter who a large and pate componentials whole. The triph is, we are not ar relating with peculie taking, accenting with the resource.

Latitud analyze the privacimental sole tyrmethod and short privacimental sole tyrresite taxic a uprive of ever make explaints, called experiments in simulating put write operational term? They're avery of operational term? They're avery of operations and term? They're avery of operations of the term of the terms of method of refining, of degrading operations

And the top top of phases Water are they built an engaging assess of elements to backness a course that we option of a numerical hanget for focal with increasingly simple and more course that we not be provided in the top of medicated the of of provident to a watering unany of more parts at ministic patiented the result of unang highly doneball topations.

Franky we have detailinged a solution of an encreasing sealable or aut health from chemically alloyed driver and the operating polycone, most ago water of were fact. Carly operancipation vapous in thougands of optil least to rive

Why double as wells to do all hard could be provide your dop to cards that all hard could be to approve that any other that the provide to approve them as hard wells, previding of the provide them as hard wells, previding of the provide them as the second be the second that the second be the second to the second be the second to the second be the second to the second be nearly approximately as how the nearly approximately as the nearly approximately as how the nearly approximately as the nearly approximately approximately the nearly approximately as the nearly approximately the nearly approximately the nearly approximately the nearly approximately the nearly the near

Soft Types way plut has well as a construction of the soft of the way to the start for the soft of the rectancies of the soft of the soft of the rectancies of the soft of the soft of the soft of the rectancies of the soft of the soft of the soft of the rectancies of the soft of the

Galuye Waters, the cartisonescand writer says that he has not braced, the past of braces and yet.