COMPUCOP: PUTTING THE BYTE ON CRIME

CELEBRITY INVENTIONS SPECIAL PREVIEW: THE NEW COMPUTE MAGAZINE

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THE ZOO OF FROZEN EMBRYOS BREAK-THROUGH NO MORE ULCERS



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By Robert Silverberg. The prevent in rew works seemed too good to be true. The sol was not, the weather semperate the natives unobtrusive Just the lend of place you would want to settle, or is of seemed.







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By Bit Lawren Wet an advanture to roa the earth stand atop valcances or delve mice bolow the see but for geochemet Harmon Chag at all in a day's work

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Introducing Comis new aster publication Compute This comsister magazine of home computing. Compute allias you need and wave, from the latest in software and accleares to occurs from the hackes unaergound. This prevene testimate game inverses, interviews with computer solentrate plus into for Marchate, frame, and DCS users



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Last Word

By Roberto Santiago Whose grandmother etisraed those universal myths about the homble things that happen to kate who use four-fetter words?



FIRST WORD

By Art Agnos

Nearly every U.S. community is vulnerable to natural disaster Yet local officials, burdened with crises such as homelessness, AIDS, and drug abuse, postporce disaster planning. An ostrologade codo vereix hereo's transtocial incost ten belicity of the resource incost ten belicity of the nearborn products a recent study by the litural distant compared ten belicity of (USSS). The next tig crist, incost along a first frammer to anywhere along a first frammer ten anywhere along a first frammer ten to anywhere along a first frammer used frammer ten products and a major could be along and a first frammer ten be along and a major could be along and the along and the products and the major ten be along the along and the products and pro

Nearly overy of is only is vurnicable to some form of instanzi disaster. Poods, humcanes, santhquakes, and foreist tires claim lives and threaten property overy year. Will local officials, burdenses with clady or sets such as homelossness, ADB, and drug abuse, postpone disaster planming.

Earthquarks preparatives has inverse been a passed timery in Ser Farrols the levels of the service of the service the levels of the service processing the terrors and of other energiency personmelises part in other to advance in the flythern seems taken and the passed the flythern seems taken and the passed to consider the service and reaction to consider the service and reaction the second taken and the service and the flythern seems taken and the service the second taken and the second taken and the second taken and the second taken and second taken and the second taken and second taken and the second taken and second taken and taken and taken and second taken and taken and taken and second taken and taken and taken and taken and pathorase second taken and taken and taken and taken and second taken and taken and taken and taken and pathorase second taken and t

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Much of the damage to prvate property in the San Parcasco Bey Aree hom the October 17 Lans I hade authauthor occurred in the Martin and author occurred in the Martin and beek searching as the sand the sand analy in the part (HOC) southered excesses damage as the landth setties during that thereo. Old, unreinforced brink buildings are the structures that usably tell particle California earth such buildings with the pactient and such buildings and the acceleration such to Martin Street Last October

science expension how believe that roalively nexpensive reboftling or support systems could have prevential the " oxidentive damage in the Marina and South of Market neighborhoods. Relicofiting that can help prevent Sentoral damage to older buildings includes bolang wood frames to the foundation, adding steel connectors to foundation girdem and posts: and adding remforcement panels to the stem and foundation walls under the structure

While secure of publicing asgument authorpation carry buildings asgument authorpation carry and economics must determine the burrefile of auch structural alexandro against a vaneey of factors WI retroteting an del brick situature alexandro as stability against aartinguates of varying degreeo? How many lives all be street by these changes? And whatsocus and/handloa changes? And whatsocus and/handloa

None of these questions would be initial if essentially predict could predict could be when and where an estimative way grang to static Disfurmative though setures technology has voldly though setures technology has voldly paster securities that have in the paster securities that have the paster securities that have in the paster securities that have in the paster securities that have the paster securities that have the paster securities that have that have the paster securities that have the paster securities

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Public officials like to issue assurances that overgone will be liken care of in the abromath of a mean disaster in the best of cases that may happen, but if would be interportable to are a noticel disaster prophi should expend in the first even for 48 to 72 hours.

We five in an age of 24-hour news, when other people's tragedus come to the across our belevisor screens with nerability. Guiling our some of vulnerability. But desalitats don't happoin only to other people. They con, and do, happen to us. Be pressnel, DC

Art Agron is mayor of San Francisco.

OMNIBUS

From cloak-and-dagger dinners to cannibals and territorial tigers, our writers will traverse the earth for a good story

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Manazia cohori in ontre 189 ivos laka a zuvelto detective. Author of A Public Record Primar An Investigators / Handbook (BF4) Pross) and a reporter lor MBC. GBS and ABC, Rey has instructed LA pelace obliostr in the act of croative onnie investigation

Peter Garman (Troute in Parades) page 40 dten goes beyond the could found fourter uneriong out endergand have ing breaky in South America torisk and other exdis places White

not living on the edge Gorman writes for The Earth First" Jour nal World and the Organization of American States' American

Matabanetize operation introd Apath Harreyt A Aher (Ecose), pages 10) apparts his well. White on his imply pursitive mostgement. Allow many matabanetize and datalaned for hitree hours. On another occusion a decise accustie with allmable spar resoluted in the fetters packing pursualized have had writeen for final invertee. (JAK Dooly, and The Edula

Harmon Crug may be the last of the sworthbucking acet beta "any BEL lawren (Insurnow page 55) who fondy moult has ashausting meetings with the geochemist. "He is a fonced nature Asking thm a question is file uncortaing a hydrothermal well the asswers flow on and on ord, on ... I seeme also complete ulas to Psychology Today Nation al Wildlife and The Scientiel

Strang in a thry dhoa in a thry builting, Jassoa Sport interweered the Criscinneli Zooa Baty Desaire (Barth page 22) And Mhon she went to pour my orders, Sports rows, Iwa area more strong in rebody the wrong orders and the strong in the postance and tweat like. Oppin I didn't own went to know what was in it. Sport is a transl wriewith has also been published in floader's Deport

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"As a child I throught my the can theorem was in original sita "any Bot Begge ("Once Uoca Thron in America" page 50) "We all invent throps to make our these essents, but the certy pattern models are feasing because a musclan and anger as well as a classified hearing with the 1888 Eugene C/Nail award for his concentration that of the source to the concentration.

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COMMUNIC/ATIONS

READERS' WRITES. From the halls of politics to' the halls of medicine

Well Worth the Wart

I must tell you than Liam duky intensised with you in amazing megapinic Chrin has faat become one of my true personne the enry problem I have is that I read it. cover to cover within here duky and it issue amove from rail of behant authors and reported has queen kinech for gabbing the needed by the larent the tepps are needed by the larent the tepps are needed by the larent here topps are needed by the larent the tepps are needed by the larent here topps are needed by the larent here any of could be also also also also which layous sixty i leagonty antibibility to annot on each needed

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Republic of the Marshall Islands

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Women Beiong in the House and Senake Here always format Cartin to be a faction for intriguing, and integrating magazine. The First World by Recrementative Classine Schneider in this May. 1920 assue fulfilled my expectations i was shocked, however when she and warman here "Institued inzervision.
> Brian Scraft Sudbury, MA

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Types Pun Their Course

In interrope to your anticle TPT A Suppertyree Cusies the Hows and Weat [April 1990] the listing under Colirized Free Uneventy— ¹ Art Rivi Tha Unterread Expression of the Unconsocial— an activity and filtering of Archihops a Jungan drivern tasky carror. Although we have offster the occurse under the Colorado Free University several times Hown interreads should contact Architypool 907 East Terth Anaroa. Derwer CDI RDIII.

Claudine Y Jeenrenaud Director, Archetspos Derver DO

FORUM

PLAYING THE DATA GAME: A congressman and a computer magazine ' editor choose sides over privacy

warything you chrupe to be your crost cause—along with your buying proferance, readerfail address, and pethogo your phone number—along address addresses who wants in We asked the information to waiable to anyone who wants in We asked Cangressman Ubdi Were Science (Compare ImageZine), we have used

Are we in good bands? With more and more information being collected on our income

CONGRESSMAN BOB WISE

As it becomes easier to pathor and manipulate material about people so that you can deweep profice of these people are was instrumental in slopping the TRW Corporation (a produbureau) from labiting the Social Security Administration (SSA) check the Social Security numbers that TRW had for millions of people. We fell that was not a proper million that SSA.

I don't mink people fully apprecate what is happening in data gethering and data use today for isoample, by filing cut inthe quederinsel card at the supermanent, heavies gatter then ashee put into a system that can become put into a system that can become put of toge databasis ready wurkable on computer reads found tabling about millions



detabases, should we have the right to control who dat access that material? must sak, quasitions. What is the appropriate balance for the use of federell and, in particular, parsonal data and who will monter the flow of data? There is no one place—or parson—in Congress that daily looks at the federal role in parency and what's happennew with deviaed information.

The federal government not onby has more and more accesse but also the stallay to controlize more mature. The question then becomes, Struck the accountialand momentees the available to bushmassage? For instance, if there our Government information, Justice, and Anvariations and control the most and the state of the most and the state of the most and the most and the most and the most and mo of names, with more than 100 optegones into which people are classified. That is a sweeping accumulation of class.

From a consumer marketing standpoint, people, may want that but can the information be used otherwise? For restance, the compage normalikets trying to tanget people for electors? Would by the IRI? I'm not trying to make a value judgment, but we must look at what we want so we can benesse currelyad

The Data Protection Advisory Board we are proposing will constantly be dealing with issues

that come up, trying to look at all sides, and advise Congress as well as the private sector. It may be that the polytory board, through its activities, devision for station that Congress adopts But at this point, its not a regulatory board. We're not really talling about combratts as much as try not to extinate market mark.

PETER SCIBOO

The hundred years ago, a fee American revealutionaire perifed the Bit of Regise. They could not be bit of Regise. They could not be under the formation that faces us avery day. Even inc, they understand the power of these secons to and discorrination of that understanding to paron that understanding to parin the understanding to par-

Technological advances have taken as no new wohld of information. Computer networks, enelise cormunications, fixs miof uemocratics worklowde. Information has become a valuation commonity of the positionodern sign. Logistisch, ethols not final dark beames practice and a minfeedable of our enths

At the same time banks, induen, and boal governments are oblocing an entermous storehouse of these shourd American consumers the release of those data to ophratizative information paraelers bauess just concern mit has prompted legislithm, deagneed to burb uniteritabilit aoper soul are of their information of each revolve the physicism we reare as Arminicants.

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SPACE

HEAVENLY FEATS OF CLAY Coramic composites may help NASA build a better starship

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NASA opnisiders the lightweight and durable stuff truly promising. Over the next free years, in fact, NASA has plans to give about \$10 million toward paramic fiber research to the



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green at NCBU's Dollege of busilias, who leads the cereanic work at the WMIC. To mostle shapes from the tibor, EI-Shreith and his team are developing mitchines that weave composites into threat-dimensional shapes such as owneds and conect.

Much of the latest aerobrating research is actually an extension of sochrology conceived for the space shuffer, says Howard Golosian, child of the thermel protoction materials branch at rAMAVA Asses Research Center, Moltez Fold, California.

The oblight some insulation that also a blankers have excited so well that they even caught the syst of French and Soviet autospace designment. Much of the heldsteals work done by the French on Herma and the Pussions on their burst was based on the shutto ' says Collabora.

Beth the European and Sovet space agencies will undoubted by be paying obset attention to the shuttle again in 1995, when NASA conducts the Aerostead Facts Exercised (AFD)

"The orbital will lounch a twohundred-seventy-mithen-dollar aerobroke experiment designed aerobroke experiment designed aerobroke things, to test the ability of heav centres (blar composte resultions used as pert of the aerobroke heat sheld. Gold sten sens.

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IN THE BELLY OF THE BUG Ulcer researchers report an unsuspected culprit that Americans can't stomach—bacteria.

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balane spinler stears wastin a beatty stanuch (res) stayed that way; an arthbiotic care our be expected soon for the beatweet of alcers (right).



everyone against both gastriks and ulcers soon after brth

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Similar Indings energed Yom a large study conducted in Iniand in 1985 by Dr. Complus, body, non an exeitated provise. Social Networks and the University of Southerin Dalforma. Docing Hourd Networker in 35 percent of plasmins with ulcers, 35 percent of those with gestriss, and 50 per cent of those subjects from an intermation of the esophopus

While doclose predually begins to society Histochiada's association with gastric disturbances, many believed that it was a colorter rather than a catala. They argued that the organism might be an opportuned, that had amply lound an alterally weekened storm-

CONTINUED ON MUE 72

EARTH

ANIMAL HOUSE Suspended in icy liquid nitrogen, snow leopards, tigers, and rhino wait for life at the Cincinnati Zoo

wo bright-colored industrial druma domination that Somer darkoomin a orner of the Disconteil Zoo swelenary dinto. But what's developed here will have more impact on the future than a roll of him. Here eccs. sporm. and dover-

Here eggs, spann, and developing embryos of endangened spectres he encapeulated in straws fouring skertly in logidinlogian. Held in suspended animition at -380° F, ihma under logip ards, and Bengal tigers wait in Inversi anterparters.

The force behand the frozen

carry only one legg to term at a tase, which lents the ammaid abity-to-reproduce. For example, the genilation period for a three prognancy is 15 months. And the thino work become program legion for another four years.

Once Dester determines in anmith estimacycle, she uppet he lamada with homonac that evable if to produce up to 30 eggs. Then the animal to bred habitally or athlebally anomated, and the embryos drop and the ultrue Dreases those, implant open in a from two enclangered Indian deeent cets whose egg and sparm ware placed in the uterus of a house cet.

Because a lega survival of type case are headed for outstanding and zoos are hint's prevent to save them at animale that stard the bast channel of surverg are given, prody. We have limited acurces, "Decease says. We trapeted animals that were enclarpeted animals that were enclar-

Topping the last as to black the no, whose numbers have failent toom 60,000 in 1970 to 3,000 beday, due to gread and myth. For centures myth assess have imbased miss from twinn-finds to heart disease. Bootute a offgeneric center 20,000 on the basic markst. the situat/me of the to is a locative buomber of:

Some widdle rappets, however, or quarter within a Drostoff of soft is the basil use of precises connervetion dealers. It is helder to transleoate axistrig populatters, " any Brucke Durring of the World Worlden hund within sponsoning annubus in the wild wild bet the artipoacherg makanes. "Occbing annubis lote that, wild egg: (The Centes service) bundpet of \$200,000 comes from pubto and pravale sources."

Even to Descars address to ambage transfer may concern to any hope for some of the earth's working creations. Site enviro, some angenetic focus entrope to zoos, instand of moving live are mate, and even supplemented areaments, and even supplemented area and any some supplemented area and any some source and the focus and the source of the focus and the parent appears a work on a dark parent appears a work on a some as rescoring in also with focus and appears occurs to an even as rescoring in also with focus and appears occurs to an even and appears occurs to a some and the appears occurs to a some and the appears of the appears of

the rhico leces nearly certain extinction Embryo transfer may hold the key to its Astere.

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200 the carbon for High-production of Endergreent Workline, in Sharing Dansase a reproductive physicilogist deviced is combiting the permanent lease of many of the worklin name and the technologic workline carbon for appendix the process to other species, which requires technicity of each wire marks regord active systems, can be combined for Persearple and terrybits araw wighthick with the technicus hinds

Athough females of any speces produce hundreds of thou sands of epos in a lifetime, some surrogate mother, which will carrynt to term. Within a week the anenal can be bred again

Decours's efforts in embryo timeling to bask to 1261, when whe has experimented with Bengo farges. Size them named the instancemental hitrafile, fueling embryos from a rere Arroan borops meksipe at the Lee Argèez Zoo them seturing to Droad their larged to an orthogen their larged to any body to Argan their larged to the body to the

CONTINUUM

ORGANIC FARMING

The same to have not warm over Case Form. Were excepted down to indexing and frame, backword, have over the constant cubies curreng up the participation of the same to the same to the same to the same to parasade that white theward woods to locate that white through to the same to exceed woods to locate that any intercept to the same to exceed woods to locate that any intercept to the same to exceed woods to locate that any intercept to the same to exceed woods to locate that any intercept to the same to exceed woods to locate that any intercept to the same to exceed woods to locate the any intercept to the same to exceed woods to locate the any intercept to the same to exceed any intercept to the same to exceed any intercept to the same to exceed any intercept to the same to be any the dodde any exceed to any the bodde any exceed to any intercept to be any in

Conterpreting and Vernand's 460 participation barries way, Behard Wowsal, who shares those of 160 across that lie 12 infere east of Montpeller, has far aswaral years exerved on the Vernand's Cartifications Boards - Review Committee, a body that Integra assess when, how, and with a particular form is rough to be availed rearrhowing in the baref.

Hescorts provide in the table of Corporate is the Lange constraints and point in the core of Corporate is the core of corporating points and the core of the core of the corporating years. Unlike such as prior and and the core straints of the core of the core of the core of the integration of the core of the core of the core of the integration of the core of the core of the core of the integration of the core of the core of the core of the integration of the core of the core

The Vermont Certification Board, however, waits one year

after chemical tertilizers have been used and three years for chemical pesticidos before certifying a farm "organic"

The ended of organic forming is that it you develop good by you will your healthy produce that is invisited to distain and a field graduate mathing produces that is not start to distain any an field graduate lines healthy you. Hence is a lines healthy case. The applicables, this near the your health and the start of the the distance of the start of the start of the the distance of the start of the start of the the distance of the start of the sta

Keeping plants and sol healthy without other toll assettinos, heavier, is much more time-consuming and lakermeans have planting or spaticides. The solds must be weepedd, and other, bugs eleminiset, by hand, and behave much emails from composit This is the primary roksen eightre regulables coll more to buy. Qu'it employ, they coll many to produce

We determine any encode to a set of the set of sector of the set of the set

The next time you get a deal on a pound of tomboas that were grown on a corporate tarm, proved with mormato tarm, possible before here were targ, and proved with chemicals to make them appear approximative rough of the time they were is highed 2000 motios to your proceposed on the second second second second second second a moment to consider here much of a bargan are they readr-__diff__MC_BEMAGE.

CONTINUUM



Georg puty When primates press one another, canous alterness saw the brain, area a Gardendon University meanwher

THE ROOTS OF GROOMING

Ask anyone who has it done Getting a manicule can be consulty piecear able. So can haring your hour tased. If recent expenmonitorys are any indication, the piecearces of grooming may be linked to a charge in bean chemistry.

Enc Keverne, a neuropsychologist at Cambridge University in England, monilated the brains of a group of sortways while the annuals were grooting one another the societals bound that during geometry. The monkeys brains produced ncressed announds of balais endoptin, note of a obtoo of charticize that see often referred to as the brains is own opport. "Endoptins plug into the same brain reception as such nationics as oppur, monphrise, and herein and produce annual herein and produce annual Inplay rationer, a cherry and het block the bank's receptor of endoptins, the prolegy bacteries entable and convessed their grootting, as if so compensate for the ensuing tack of endotions, and the problegy even when the problegy even advant the problegy even advant the problegy even advant to the second advant to the problegy even advant to the problegy even advant to the problegy even advant to the problegy advant problegy "the second advant advant to the problegy advant to the problegy advant advant to the problegy advant to the problegy advant advant to the problegy advant

"I'd like to live like a poor rean with loos of money " ---Pablic Passes

PHARMACY OF TH PHARAOHS

The ancest Egyptate were well known as skilled motopans. As it turns out, they exist shabby physicates, effer They had an impresence aroug of hortemade medicanes at their disposal, including an effective antifactional cream and a contraceptive device mort he topoly's opermicidies

"About a tried of the ingredients they used in their drugs had pharmacological peoperates," says Dr. J. Worth, Ecose, poylessor of pharmacology at Bastan University at Bastan University at Bastan University at Bastan University at Bastan Bastan David Control (1997) accessing the State of David Bastan David Control (1997) accessing university of the gention accessing for the gen-

In addition, they developed a contractprive viginal supportancy made from crocodife dung, sake refu, and acabas gum "Recordy," says Esses, Sacoca gum has been recognized as spermatocals in the prostmo of wag nai lacks eard."

Bell to be examined is the possibility that Egyptians used inve ergot (a natural mource of LSD) to com bat megname headacted and prescribed manuame for a variety of als.—Join Hogshire.



Walk and it preserved called dile dang as a spectricide?

HIGH ART, LOW ORBIT

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In 1982, the international Boace Varx, Woods will load the first estilatoreaunal exhibr, a 20-tool-worke mit aerospace organeer Manoo Bartessoom advanced inetal face that solvaid allow the solubition, cross in space to experind and hardsen in the solubition the "space peope examination," will be assortight and the "space peope examina-



A taile over Easth or just OUF



This tousku of geood hourity: inculatment, well itsearer for their decript or overrich toods, have receasorund i non-application that equild out basis agrebaently on undeavable fail.

launched from the Souret Union a Mir spece station with five television coverage provident worldwide.

That same year Woods nopee to diapatch a similar ring from NASA's space shutte. The rings, which thould be works to sharp-syst stangaces, will orbit the earth for preerai doys betwee to dearb and burning up in the atomosphere

Woodh gistra a meet duratis schul obget dart tor free percessors a much a work of the second dark of the duration of the second dark of the weight of allowed to kales meters. From the ground, and will be warble for about and warble about the dark deptory subar aut and the dark of the da

THE RICE STUFF

When Jappmen and Healan measurement of boarend a few years back that noe han could reduce blood chaineard levels, Amencan oreal makers railweld by go f reis ther products. New studies at three Magazhitosets unwersities have demonmend that the oil estacted from roo houlds on do the same three, a finding that could send chelessant-contexp of a reise tesm coulding of reise tesm coulding of

Experience in Backets with Transmess and Transfer Universal of Lowell and There and the server that the transferse, obvious that the transferse, obvious the care nature overall dividuality of a much as dividuality of the transfer operator of Lowell 5 of not produces and department, if the lowels of sproater the lowels of the lowels of sproater the lowels of the lowel sproater the lowel spr

The Massachusetts stud

as even you for a first and the second seco

Before nos bren of becomes a vable abstractive to other cooking offs, however, the nos industry must come up with a cost-effective way to produce it. Extraction facilities may be available in Japan, but few Arrences plents are capable of extracting it —Goorpe Nobbe

Half the art of inventing lonsists in knowing what wade to be invented " —Herman History



CONTINUUM



The executions along with a haddonia space and part care a sevening basebail dat cently do you re

DEATH BY BASEBAL

For even the hardbest of heads, a speeching basehold head heads and head basehold basehold heads and head basehold select the U.S. Constrained select constraints and a select books to the head and calved between 1073 and 1983 Another 16 ded from blows to other areas. So much for other areas. So much for other areas.

Might there be some way to covernier with the covernier of these utilities ranted deaths? Worth, inc. a sporte equipment instrutionation of the source of the source of the nassee, says the problem, would tade dramsbrailly of the of handbale would just soften up. Simply replacing a traditional basebale with nables and yain core with an othercar of popysiverhalities Ream plassic could induce the intellihood of sensus woung by 70 percent says Warth president. Jess Heald Weight, sons, and every reams, baltaver would remain addition wheater

Worth's balls, known as Peckaad Ingry Factor or PRF balls, perform the stypdard baseballs but with one difference. They end a duit, two plothed sound when hit as opposed to the stored crack of the bat

If the ball makes it mile professional parks ont cowony that the game inspit, change. For example, outtectors insmod by our to respond to but sounds in detensive data may end up ally, installing a smitch to the woming track for a

Banebal is mostly percent physical, and the other half a mercini

YOU BETTE

SEE OF LOVE

Lauking tor The perikal loss gard? Gate way studser concerns backed a loss A studtude gate the back way studtude gate and the back way and mark, way approximation of the dampes Law of Carlor University in Messeabuscits Alter watching a guoda alexity and auto-carlo carlor dampes and alexity and alexity are auto-carlor dampes and alexity and alexity are auto-carlor dampes and alexity alexity and alexity alexity alexity and alexity alexity alexity alexity and alexity to gaze into their partners eyes for two merudos. II worked like a charm "Mutual wye-to-wya contact dei visiaed increase teelings of atmotion interest warmth, and ascharment for each other," save Land

To see if making parking was in that the key. Land had some of the couples look all each other is handle reasonand of had one patholic look into the grass while the other looked is the perman in hand Abar pathog these papele in tourd that they magin as well have basen they make the source bar all the pass on they aroused

Why down much all party microasia altroports". La rel beleave that when we writele acts of lows, our fourings beg in to ballow suc Generally, the more you and late you ne in lows. The says manwell, not just performed bets much participents".



The last antice: When a correct to remained the systematic of acregister to a Clark University professor





CONTINUUM

ECHO VISION

Use bots, which instanclively use their natural isoner to instrugate is the dark, human have an intern shifty to grant themselves by mappeting the sounds of extress. This has led electroness engineer Adam A Jogenson of Cabiling Park, Fands, to device is hand held source sensor that ound ensities the bind to "neer" with sound

Jorgensen's echolosites spirar works are built built of the spirar works and built built of powered institutions built of the spirar built of the resource of ultraceter basis, where each and the resource of the spirar built built resource that are work to be the spirar built built of the basis, be durate instruments basis. Because the ultraceter agrant are too that the head seek har like hearing built built and the spirar built head seek har like hearing built are and built and the resource that are work built of the resource that are work built of the resource that are and the spirar to a resource dissertables of the

"Different people have different abliese, but with training and precise a blind person can hear the dalary or a shart. If you and the Beally, "says the anventor "They get a sound image of a surrounding atom. It's aurprainingly service, sually, like an advanced hearing ad"."George Nobbe

"Beware of the Truth If you find a Truth if can demand that you make painful changes "

-Frank Herbert



Bing as a bar whoever somer the prove date I be web account the super-backbook abilities of the weight manufacture.

ISBESTOS ON TRIAL

Ever since accentes, when not accentes, stoets is not the second of the process of the second of the right of the second of the transport of the second of the transport of the second of the stoets of the second o

According to Mossman, 90 to 36 percent of antexitor insulation is composed of a type of asbestos called chrysofile. Unlike other existence force, colled anythologie, which an improcise (there are carly. This, carding the same carly. This, make chryschle ablesto and the same carly the force of all public technologies of all public technologies of all public technologies for carding of the soletoge for table concernes of all public technologies transfer the soletoge transfer to the soletoge transfer to the soletoge and the soletoge transfer to the soletoge transfer to the soletoge Occupational Safety and Health Administration

Mesaman concludes that the asbestos scare is "much ado about nothing: the a public panic sort of thats," she says "People are afraid of lability or of not being able to sell their houses"

Is the DPI Drinking & proving as allowed in Fight of Moderan's recess? In the Internet in the advances and the Internet in the advances and the Internet in the advances press a difference between press a difference between press a difference between and the evolution between and the evolution of the advances and the evolution of the advances and the advances of the advances and the advances of the advances and the advances of the advances advances of the adv

-Ballawon

"They carrie, they eaw, they be a little shopping " —Berlin Wal matter



Autounics, Min Al Capona, may have been framed by the line

EAVESDROPPING ON KNEES

At one time or another, amost overy veckand athiotis—where yapper, hoopsets, or benns inst—has opporting to time on to knee repuy. In tact Areas represe account for as mony as ono thing of all referred to orthoped a clinics. Diagnosiing lives problems usually requires X rays or exploritor arthroaccous surgery.

But now a team of doctore tiger The Gueen's University of Bellinat, Northern Indiand, has doweloped the Knee Screener a device that's capable of diagnosing form cartilago—an extremely common form of kniss injury arrept by inducing to the knee move.

To operate the screener, technicisate attach three strall persons around the patient's knoo. The sensors puck up the characteristic vibrations made by knew reovaments when certiliage



Squeaky tengor Just laterary will reveal the damage

a tom. By correlating those wombors with the postion of the knew, doctors can assay locate cartilage terms. The entries diagnatic procedure takes only 15 mitrates and, in prulmmary helds, has been accurate asked by percent of the time. The service on several to test is never and preparing to test the exervise on several to exercise.

So fire, says Queen's University surgivery reactivity Paul Mogrin, frare has been some interest from doctars and sports intary clines in the Boltos area. Will there opme a day when have scanners sake their place beside Naufilias machenes in every NL balting open? "White still at on safe stage of development," area Magen - But that's a rice hought "-Bit Laven

"The dopal we do rrrredately The uncernshatenal takes a ISS konstr" —Henry A. Kounnes

RUNNING ON THIN AIR

Two years ago originoers James Dooky and Philip Harmson were ponduring what would happen when or supples bootene scarce right and gaseline proces skyrocknika. Then a way to avoid the problem and out back on the wind's minance on of come to them, literally, out of that ar

Their idea was to build a car that runs on liquid air chiled to -315°F When added to a Libe natural gas, the heated, compressed michae would gate and the expanding gas would drive



Rew power: Torniedbus are fait of sound into hery, and their prints) component may make a powerful automotive heri

pattors, Harrisord Bays, "Just Ike an old fashioned Starley Sosaner." A car outfitted like this would harr acceleration comparable to gasolin-powered webciks and would produce no singe Hammond estimates hat the siz-gais misure could be soid at about the same proce do patione

The deals a smiller to only bookly and Hammond' patiented in the mark lightware while they were consultants at RBD Associates, a Costome think bank. At this time they proposed liquid entropies as a fuel spring. but the team has since dealerment that liquid an would be cheaper and would penale that and an

Despite the soundness of their design, the engineers haven't had much success persuading the suto indusing to take their idea seriously "They don't want to retool the orthe industry," says Hiermond --Steve Nadio

"Men seek out reheads for themselves in the country, by the seasch, on the mountaine. But all this is unphabsophical to the test degree, when thou cann't at a momenta notice retire unto thysek"

-Mercus Aureios Antonnys

CONTINUUM

KIWI WIPEOUT

Keek, Bat serder, Imagoen treet, is a most decrimenting fruit it likes summers warm but not be hat and its withans and but not oold. Change those opridions at all and the fluit will not grow, a fact that has the kee industry worred about the greethouse effect.

Now province in review about the standard of the second second crass is a proven, and a separative as rule. The province and a second s

If predictions are connect, the greanhouse effect will lead not only to hatter aurmoses, which could without the kaw on risk mus, but also to could interace in the doubt must be able more than doubt in the the second second second the angender more topp could organize more topp could organize more topp could organize more topp could organize in amount matter four that low, which is could organize the more topp

One possible accident, any Cherry, is to move the crop south to cooler anexe, a process that is alwaldy under way. The toroble is that in New Zoeland, there's only so much south left Another souther result left Another souther result left amenument of the the south left and



Pounes i new 'T' to a good loek at what may be the "lik of a tiping prove it things heat up in New Zenland

seatant is extreme temportures that down yong that spectrag the information through patting the information through need true least proving, while the automation temporal proving sectoregate. A free this of advance, in "Chrissays," ringin lead to a greater security of the low crop as a whole '

"The groatest happeness of room is to have probed the increable and quality revent effort or unknownable."

-Johann Wollpung von Goethe

"Politics is the art of looking for pouble, finding it averyshore, diagnoring it incorrectly and applying the erong numberies."

ATTACK OF THE ZEBRA MUSSELS

As 8 our water supply waran't openied encode, a new times coreas train an este lang mader muscling rist bie apasitic environmusais allo new sproding across the Cried Lakes, colonizing and dogging water openies

The museois immigrated term Europe, stowing away in the balant tarks of ships there moreoscopic larvae turk in this water that they ships often fluch how five tarks into the lates. The larvae face with the currents, then also thereades in thick tryers to stable suffaces.

First spotsed in Lake SI Clair in 1988, the mussols have since made their way Into Lake Ene and Lake Cinterb, the other Grisst Lakes and the Massesteps and Hudson mans are sepacad to fail to the robis mussel hordes sometime in the near Astaria

Europeans have oppured or muscels in here water appear by building water and a standard water water and water, which the musuals brain. Carrod en musuals brain. Carrod en musuals brain. Carrod en musuals brain Carrod en musuals brain Carrod en musuals brain Carrod en musuals brain Carrod en musuals and and and brain and the carrod enmonth of the carrod enterna and the term

Beakes choice of the manuse have barged mits the float often of the Cenat lakes with beth good and the direction of the Cenat lakes with beth good and markly wetters of Lake Tena analyse the Cenation of and signal, the Nord for laws the Optime between of float subar has no concerninged daving directs to Cenate to ange the best made the cenate to ange the mark participation of the mark participation and the cenate to ange directs the cenate to ange the cenate to the cenate to the mark participation of the tenate the cenate of the tenate the cenate of the tenate the cenate of the tenate the tenate of the tenate the tenate of the tenate tenate of the tenate tenate of tenate tenates of tenates o

Unfortunately, molusiscating humans will have nochance to east the invoders deal of carefunds. There is a note of thursts," as 5 beingest Thomas Noteps of the National Governic and Atmospheric Administration "I goal door drink the water tigm Lake Enk, you don't eathe maskeds".

-Greatry T Pope

SR CAN



ARTICLE

In tomorrow's world of high-tech crime, the cops will stake out computers, and the robbers will wear electronic masks

CRIME BYTES BACK

BY LINDA MARSA AND DON RAY

"Wake up, Carlos, ' Courtney biggad again. "Captain Whith wants you." and the bad prior worl

Indiad over and tumbied for the transceners or button to make Countrey and everyone else go away. But the mature is the two tumor, i move thad ecrewed up. Sure everyigh, two taits of the page-of Ad bitset 5. An interaction, the res

Try, onengada, Int. Ne desports, pulse! I'm seeke, Dockhamm A," I said I pucked up the transceiver and pressed the Av2nick Duton.

"Authonocate plaase," the digitized voice coord Thetal it near my face and pried open my hoje and "There. Recognize that retrial Recognize all hojio overworked valle?"

"Authenhoaten completed," hie computer vone eart "Good moving, Sergeart Perso: Yo eight burden Authen-Satunder, March menty-ten AD fou harves cativesing "I verspect a plow anound fine tensicerver to multer lenath to benen tel ten auteener buten

"Song Captern Hit the wrong buffon egen "

Joe Veraldi was one of the last of the old-line cops who came onboard back in the Eightes no real training i computers or sociology—#

PAINTINGS BY KENT WILLIAMS

and of chooses he adapt when there was loss of cash around and tha bad guys went have-to-face with their victum he and othars like him had been nelegated to drake poor about the time they neleval McFnill and changed the sisgan to "Take a tyre out of arms" " jepting come adays "Someone has they are

The second secon

TECHNOCOPS AND CYTIER-CRIME In the beentyfist contury cracking a local orms of hours of bolicus meetsgable work. Just about meetsgable work. Just about work, though will change. Even Dick Tracy could be relegated to a deek jab as costs become hylicula of compare war ands and bookain humanes. And as live entroceas and they even fighting union speer, so, bo, with her new soos, and not with gurine in "Nogarga, but not be an even of the mean in "Nogarga, but not be an even of the mean even of the speers and the speers of the speers command jusces at the new of a collable speerging in control in the speers of the speers of

To combat such schutty, law agents will need degrees in sociology, computer science, or both. Voiceactivitied computer termirate will link police officers.



By the year 2025, the ability to tap into people's thoughts may be so highly developed that it may be llegal to even think about commiting a crime ?

to patiol cars and the court system. They will hook into wait data banks of lingerprints, genetic codes, holographic imtops voceprints, psychological profiles and physiological characteratics that will ad in the derification of compress.

On the strete, moreover, buck, Tacyvies two-way west endors will keep police affors in constraint communication with ther dommand centres. Severg as privant tabilities, pathol care will be explored with pathol comparison pathol care will be explored with pathol comparison. But more science, positivities and forgetting that and prime, taken and table commands, will implement attable by rocid pathol cohordination commands, will implement and by the science and to cohordination commands, will implement commands up and and to cohordination commands, will implement command that and beam images to the FB, where a pained of formation pathol will donce the increasion.

The terminal addity is do at of the six in pointigene on the coase graves would be used to have a six of the six pointigeness of the coase graves and the six pointigeness of the six of the six pointigeness of the six of

Several cources in California, one in Arizona, and a hand-

ful of todaral attro, and ceter local law-enforcement ageroap have also established computer crime sounds At the primary federal lagencies involved in computer crime investigations--the FBL the Socrot Service, and the Internal Bearenus Service-agent Bearenus Service-agent heat to investigate the task and courter(Hims, bank task), and courter(Hims).

"When spints will through the doer with a search watter, they have borkawith watter, they have borkawith watter, they have borkawith watter borkawith and agent Suppten Purdy, in damon," asky spintal agent Suppten Purdy, in damon, watter damon, and agent Suppten Purdy, in damon, and and borkawith and borka

At the FBI's Forensic Science Research and Training Denter in Quantico, Viginia, and other crime labe across the country, scien-

Inter we wering superscrade techniques of gathering and checkering physical wederace The results so a transit human of the second metalligations immeasurably. If the same were approximate in "superscrade technical technical and the second second second second second second end second technical second technical second secon

But commails will like benefit from technology 'T will be assure to plate devotice like a strand of samone able in an at the comme scetch. Simplene samp, And benetware the benefit and able the numerical coache. O'DNA and ingorphis The straders will be deterging the slower internation will sub-standischart benefits to retring patients, hardwill sub-standischart benefits and in a forting patients, hardwill sub-standischart benefits and the slower the statem.

A vari instemi of kelocrimalination, linge occining an alfredar helpingen minose, with increase effective. The Automatical Imagezoni latentication System (Artis) almost instemic and the second system of the second potential of the TBN National Crime Information Careford PDCS Systemic careford y lotid mice and the linking incode understring variant and second systemic and the second understring systemic and the second systemic and the second systemic and the second systemic and the second inderstring systemic and the second systemic and the second system of before a systemic and the second system for all transmittants and the second systemic and the second system of the second systemic and the second systemic and the second system of the second systemic and the second system of the second system o

35 CMM

police departments about the next lively asis to be hit by criminal garge or senal kitlers. Virtually foolproof nameseprofring technicuses will abolish the mamatches that often occur today and result in suspects being missiverly releaved from police custorly.

Another HB calculates base for Vener. Commail Apprehension Program (VCA) (another internation on transmission collections collected from police desarry metal search the country (B) lapical distances of the collection of the search and policy of the search of the search and the search of the search of the search and the search of the search of the search and the search of the search

The crme-fighting toolbox already includes high-tech handware all the Los Angeles Police Department (LAPO) and a few other immediate state and local police departments. Surveiliance Issee use laters to amplify window vibraiting and convert them to auditio sounds. Research terms are developregrompularized systems for volcapinit analysis. The LAPC also uses helicopters with infrared isospes to messaty ambern light rais locate bodies in the cark, a technology inst developed duing the Versem Wer.

The introduces in taking isovercoal by the millary are strong like toys were interaction a strong bar toys the millary are strong bar toys to the observation of the strong to the observation of the strong to the observation of the strong one police predicted by body arms, and is to table correl and nontable strong the strong the strong table strong the strong the

An arsenal of chemically potent polos weigories may alto come out of top secret research. Stephens adds: Already the militaryhai developed a substance to allowate sociales? Name of the battlohald. Similar compounds, mared with olesance names. We the around of



Generative supple parties have ready could be dispersed over coweld during rots or entered the during rots or entered the during rots of the during comments and the control of the during during marks during the charmal motion and the during during during during during the during during during during during during which during any during during

FATCAT INFECTION. On the build to Patindale, my transcensor want off while I was trying to get 20 minutes of sinea If while the assistant acard

"Somy to bug you, Country, Country, sain "Buil do you know anything about digital water neorothy? Last night i suddenly everything stated jurning all suddenly everything stated jurning all over the power. It's happendia (most area ago. My mother's meeting me for Jacob and program of the layer with her." She kokad in her ittle-gri voice. "You? Set is to me wor? you?"

Somehne in the year shall been voling line Basesheld Folice, Courtsly had sold of adopted me as in Shire or something the real allot had skepped cut when she was a baby i had drine the preemployment beckground checke on the magnal and hear her moder had divorted the guy before Courties was at all of depen-

When J got to Palmdale J went straight to the FHA office. The FBI's Tiffany shagaki introduced me to three FHA agente and unhered us into a small contension point.

"Here's what we have "They non-"They have phened "A investigation of the accent how groten partial control of our PAF-All stateble and reduceted Photo. Rem Anime Fight 301.1 it was supposed to gettedy to be gate California free Marcomputer a commerciality of to credit har nourtainse above Darver. Curr people in Nahrspiton moseed a computer torage damantary that the Ustad State government related process has and three integrate above.

to be the part of the part of the top of the part of t

Core of the PAA agents that to have be untraining outer by answering me in a denotedy posed, self-assisted neumer. The follow further than the posed haven-Antratance Tracking pathlak was placed above the form American corlanget genue yavas age to demotale that placed above the form American corlaring terms place and the second to take cortrol of any assessed in memory and to take to disk any assess of the second to take cortrol of any assess of the second to take cortrol of any assess of the memory and the stationary object. Its computer is promomental waveful the

PUT YOUR NAME ON A PIECE

E. Humbon #54,737, May 15, 1860 Summ Emotion

Philden throughout Attenues ner umpace campiles of the genues that helped our country revolutionite: the way the world lives, the face-tangen precision models once required to register an investor's patense. An catmod 100,000 of these masing 10th country patent models are out there, some gathering dust in attics, gamageand workshop comes, a few pacular displayed on dasks and mantics, others wayd damaged and discrated

They demonstrate a two-century welkgering of investive energy unsuppassed before or since, a heritage to inspire our future and reikindle the spirit of American ingenuity and competitiveness... today.

Preserving the Proofs of Genius

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The Matses use scare lactics to keep evil spirits away. Could our cunosity kill their culture? PHOTOGRAPHS BY JEFF ROTMAN The undewas thick, the path overorown

en nearby The path led from a natural

leatherless arrows, none of Turn's

being destroyed so guickly that if I want-

where the locals received one with stolightning storms as they danced upon

the streams deep in the luncie. Three

subvis that had not yet become touriet

to inutry. I asked the local whole

HE RAISED HIS SHOTGUN AND AIMED AT THE OLD MAN'S CHEST.

that bothered me was the hunting 1 that we could carry food. I thed to make many still lead the traditional husting. him understand that he was killing en-

Moreas would explain how the Matses

with us and whatever we could call in

didn't believe there could still be share leaves. Everything I did was

from the forest. I began to get sick and was reasting on the fire

we started up the Auchysics and spent named Esteban, a friend of Moises' In ate only some noe we'd brought

THE TWO OF THEM STOOD TOE-TO-TOE, BELLOWING FEARLESSLY

king, low hut made of leaves. Outside, longhouse made of sapings, Nearby, Mataes after they'd narded man towns

handed our shotroun and some shells to tokana "Matses," Mones said, emirup

at his herd. Battern arriak bows and arrows. Smoke usued

local faiblose energentee arew so into they 12 feet Trey & Matsas

Left Asserting to

can't move: this one's only prepares my-my in the pairs

it. Moises gave me a warring look the old men spoke "He moved to this place after a secuar killed one of his

propped against & Losf bags, emmel skuls, and other organization from We sat in silence until the woman

getting harder because there are so

place He didn't know because no

contrawit, "he frought we were bed spe

oun, arred at the old man's chest, and





We wetched as our cude placed the fice. Nursing a baby, a woman took the

spots and wated for us. When we We transled eating and put the







duction to the sungle liket I soon

odor of decaying vegetation olung to my

The Maters are one of who have adapted to men snart a netwal Matters on Volume of the Metnes diet.

the most issiated people the in the Avante Tron Teon Abova: Monkey, e ataple Bottom right: A Matera youth





gatherer life "71 take you into the am-

"Escushe me, Pedro," he said very about end angered species. Meke a mit-

boat for two days on the Uozwall River. based for a peque-peque, an oversize cance with a small motor. From there

The next day a young Indian stendy

onds. Finally the man spoke in a gut a valiance and to my surrose. Moses responded in the same tongue. He

something, then weiked back into the turned to me. "Let's go, Pedro"

I grabbed our machetes and we tolknew up with him. An hour later we stoel swebis "Don't say arwitiang Just

stream's bank children played with

took the loos. They held it in the fire.

A young gift had elso romed him and _ community the real



PAINTING BY DICKRAN PALULIAN

ing like goldthe while crust ground A delioranne that na minds you of every ever smelled More whimwherns sprout all the time a claser bare & aster spreads, day by day The sporters my father liked to say wil always lat you if you give it a change, and even if you don't. There's a cutch in everything. There's a catch in the place for surworld forble sof, mid weather most of the year a soft warm breeze rail of the south every starmoon. Not much rain but enough groundwater to keep the grops going Spooky native population, indifferent to our annual All top

I think we're finally starting to find out

of pallen blow-

We are set quel terraino foix who can't or wor'l hack it on worlds where everything is all divided up directly We grub in the raw gray gol here to create the bananies and

Of course the Objection are here, too, Rull three are until quiet and they don't seem to give a damn about the barr ones and dukadoms we dream about for uding on what car streets forward in the valley and power-chooping the

But now-the lossy hidden catch-the whimehams-

The first one in the village was Helene Gameth's doing Green Thumb Helene, Take a stick and make it bloom

around as your hooped arms, about as tail as a tail box of ten. Swek slender pek starrs with a closeng red conanother, and elegant horseshoe-shaped turoutest to come Helene had it growing just to the side of her front door, in a place of honor among the forty or fifty othor native plants she had gathered and purtured. Each plant was set deep in the dark sandy ground, with a high rm of earth around it to retain water until it was established Mehculous pandemer. Helene Gannett

What do you call it?" my wfe asked her

"Whyrreham tree I planted it on a when And whent

Duck all note Shairi statisti with a liny cuttors, a more woody sign it rooted overnight. Three days and it was put-

ting up new shoots Now a week later, r grew prectoral ly while you watched. The horror plant He to her bosom and ours. The monster bush the piecus the

"You've got a magica gift," my wile told Helene "The way you can make anothing fourish and grow A special touch

"It's just a matter of caring about Helene said "Of paying what the plant wants doit If you care enough attention Anyone can A few riges inter a second litin whimeher sprouted three meters away, across the road and up a 15 tien outside Nick and Natalia Works place. Oute and damthe at text. Came notify up out of the occupid, thrived more digtoly, grew like crazy. Within a week it was almost as this as Helenet's crisinal one. No watering baser pround 6.

"It must be a runner from mine." Helene decided What settlic stallty! Not even two weeks old and already

Holene's own whenwham, which by this time was three dense, heavy clusters at the tips of its stems. They looked like swarms of pink firefiles, very intense in color in the dam light of our three spinitery moons

My arte told my that Hatere's whereham was if bloom, and when I got a chance I went and looked. We work hard here, and there isn't a lot of spere fime. Carv ing a settlement out of the wildemess, it takes work, over on an every world like this. But when I got a chance I went and looked. A little delegation of Ghostes had drifted into iour about the time, and I found them sitting on Helere's porch weiting the wherewhere, too. There were four of them a male two females, and an other-over They gave me that dead-lish smills of them. This thay want back to Gheste's mind, and it's a bad idea to try to quess But

The other-own turned to me after a wivile and stild "What you think? Very nice plant, yes?"

"Why non-yes."

"We think very nice. too"

"That's nice you think it's nice." I said-"view pretty flowers. Very very pretty pretty

"Very predy yes."

Leven Lield Chooses more They're genic, performan frang, possell and genic, and the transport frank and the genic, and the transport of the signal genic and an and the signal of the signal that and a genic that has segared on comments performed and the signal of the signal signal signal signal signal performance of the signal signal signal bit show fragets were. Gook, much bit show fragets were. Gook much and that have been the were more than and that we can be an an an an an and that we can be an an an an an an analysis of the signal performance of the signal performance of the signal signal bit due to the signal performance of the signal signal performance of the signal performance and the signal performance of the signal signal performance of the signal pe

The Obsides and I are three approciating Heleney Animatem the for another free or ten minutes. It was all grown now, higher than the house. I was instand at the way polen tome mounds and the astmal of the flower was adornating. It ameled to make the perfurme my mother used to see the thread to be astmal of the flower was adornating. It ameled to make the bought of make young while building out as the stock on or of the betth and a site stock on or of the betth.

A third warmaham aproved a little

while after that, down the block by the lown hall. Then there was a fourth, and a fifth, and then we stopped remembering how many there were, because there were too many all at once.

That was writen the horses sample Ute horses for. The winnwarm beport of the second sample that was writen the second sample point or postback and sample sample sample corr transmission of sample sample corr transmission of the sample corr transmission of the sample samp

The old loaves of seeding plants undergo a chemical change that lits them with burning acid. They come loace whenever the wind blows and go wirring through the air like so many litferinterande if they touch you, the blis top bubble for weeks.

In a few days all few draging leaves had blawn off, and the bissis greaters ones. These new leaves are bugget and thickness and days which crystals from their heresteabeting. This new which Helane Garnett come nammer 'M whole gurden's drag whole gurden's drag "she yelled "Garthino but the whomehems".

The crystals turned out to be sodium hydrosets caustic sode, that is The



whim where extract if from goundwater and concentrate it in glands in their stems. At they come showering down from the leaves the crystals turn the whole area shound the toeir tho in alwain flat, where nothing can grow except more where/areas.

By this time we had hundreds of the things in the valley all around, in front of houses, slong the streets, in our liftic park. And out in the plants, too, objing into the cropiand. You could see the whitered death zone topanding daily around him

"We've got to cut 'tem down," I said Mike Zhukov seconded me. The vole was unammous and we got cut hero with heat spikes and Yuson save. Helene's whemwham wis the first to go. In the next three hours we took down twento others

Some Ghostes turned up to watch us work

"They're laughing at us." Bud Glaenik seld.

"How the hell do you know?" I asked him "How the hell do we know what any Ghoste expression really mean?"

Whenwhat moots, we discovered, we killen Threy a down'fly or a hundrid millioning of the hot parts of the water table, and which to non-drivin no time, and go even despire. There is no way to go down that far and dig them out "too can out the tank off but the sharp will sprough new subsex, dain within haur. If you got the starp out too, the outgray out will one it procetions the outgray out will be the starp out, the outgray out will be the starp out, the outgray out will be the starp out a most heat like it dates that mout way the house the like it dates that mout out a way from the bait of the time.

When you have a be careful what happens to the process. A hap the length of your three to be careful what happens to the process. A hap the length of your three, if a happens to lend on a most patch of good? We be a set of the process of the least care do a two has to more the least care do a two has to more the least care do a two has to more the least care do a two has to more the least care do a two has to mained abatchere out of severy live and by the nost moring they under mode to the two has to a cheer.

I said to one of the Ghostes. "How come this entire planet snit covered with whimwhams? What do you do to one ad of them?"

"Is no problem," said the Ghoste "When whimeham come, we get the hoogoo bug that eats them. Hoogoo love eating whimeham."

Cl couse "hogos" ant what she actaaly and Human mouths aren't capable of reproducing the sounds the Bhostee mele Bur, it was sorraching like that. And it sounded right. Feed the whimatem trees to the hospot bugarity the hell roa?

Turns out the hoogoo bug ion't na-

lo 1667 a New dhi coorneat Yoate named in 1669 he A Christian a coll patrona patrona heat Acevota to bo Acevota to bo

> Unrekst* Archimedes cried long ago while taking a bathhe was at that instant discovering the law of displacement---and the word still

ONCE

AMERICA

CREDIT 202 N. R. Phelos's hand-operated weshing wringer, patented m 1876 (maht)



echoes tike a clanon call to inventore throughout the ages Eureka, a light bulb! A pent Liquid Papert Though Archimedes' 2 200demonstrate the theory did not el² If he had load in America in the early reneteenth century he rast to apply for a patent. Not onwhat, but specifications demanded a model "not more than twelve inches square really made, the name of the intertor - printed or engraved upon, or affred to it, in a clurable manner " of 1636 causard a burst of crathougands of models-until 1990. whan the law was rescinded. The datan tsunched in 1996 by than Vice-President Bush, is now attempting to rake a \$35 million



house these historical piecos of Calvn Coolidge. in a moment of piqued shortsphiedness, chose

he models-100 000 may still exist, though at least on the years to fire and disrepairare as diverse, cookeved, and ore-Some are highly complex (like a Ne tacang and equiprig machine 1680], with a oratiomate/ap botdering on the marazoal, others ed by J E Lopet in 1877), as d stanced together with childline enthusiesm and not much else. De- late 1860's, applications were in-

sions can and do leave the realm of subgrowt alcosetter, for nings of American industries, for a threating machine that revolu-

We were and are a nation of inventors, never safetied with the status guo. After the Civil War intypes of clothespins for patent, ingly wrought wooden or metal

Clockwise from left: Tile facing and squaring machine, 1680. by C. F. Powers: G. Hestinghouse, A.'s steam engine and pump contracted in



exemple (Then again, hanging business) In fact, so merry Americane were busy menang and reacted and supposed benefit to humenkind-mony with the empha-

1870; Sulfra mill. menutecture of textiles by J. 1874; vagetable esserter, 1873. designed by H. J. Meins







preasing at the rate of 20,000 an- yeak a comuciga of eventive for pualty Patenti Commissioner 10th From the perspective of a Samuel Fisher was aspired to state. We may take just onde in lowed to crow at the rate of 5,000 square feet per annum "

A frp n 1877 solved some of the space problem were deproyed mamber of module that remain recaribury lewsly, we may chucide at what seem incredibly name alous To apply they had to fill out geous fee of \$30, and mail their contraptions to Washington, DC Therefore a beckug trap a dog-



any of the models, howeved with the skill of a master artistan. Much of our modern industry in its intency and miniaturized, can still be seen in a vegetable assorter by Henz, a hose

ing apparatus (that is, an eleva-Westinghouse, a garborizer and prolitic inventor, Thomas Edison

American preocoupation, and a plathora of these cost. Dozens of models of waatung mechanics, seeclothes hangers, and folding tomerrakers Yes, among these Iraps. It is uncortain whether anyone actually best a path to these inventors' doors, but rest assured, if you own an original modei of a better mousetrap or any offmodel the U.S. Parent Foundaton would like you to beat a path to its cloor, posthaste In fact, the foundation improvement on hopes that collectors Als earlier throughout the ocunity patent for the will cloristis any and of pat- telegraph, \$649;



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informetion an this doil is feet remains intent: J.E. Linely's 1877 patront heiped preserve Ace sharing trenspart. Although this model is relaaling its wheels; device eggs, P. Cosper 1878; G. N Chismonik's log **building blocks** Anam TROO Made (But the third have spells -



ent models in an effort to reverse what many, including its exercibee devices, Nancy Metz, considor a tack of American interest in mention. Poth-screen percent of American patient, applications now come from foreigners (I was 10 percent; 20 years appl.

Construction of the second second



1

global warming, pollution, over-

provide successful and a successful and

ing how to donate a patent mod el or make a tax deductible con Ybuton, were the U.S. Patent Model Foundation, Suite 420, 510 King Streat, Alexandria, VA 2014 - Ibbo Benoer

4.) Chunnedo G.) Chunnedo Tey Dailding Diek Tey Dailding Diek



A "hot spot" is not the latest nightclub for this eminent geochemist. He frequents places miles beneath the sea, where holes extending more than 600 kilometers belob primordial material from the hot liquid core of the earth



HARMON

ship approached MacDonald was sitting right on top of it.

a October 15, 1987, one was down there handword the research ship Mer- on the stro with an onormous whe from the Scentrel electreframmer " To Creep the Institution of Oceanography roting see and reverberating was stearing through the ship meant only one thing South Pacific some 900 miles. The undersus volcano Tamesoutheast of Tabiti. As the rrives expering and he weeke Segmant, the exercise new Tomost people, such a sit-

to churn and bubble. Loud unlucky accident. To Craig, 4 clanging mores began to in- was an extruordinary stroke of sue from the bottom of the fortune As a geochemistship, "as if," says chief so- one who puzzles out the workented Harmon Craso, "acme- mos of the earth's mades by

PHOTOGRAPH BY DOUG KIRKLAND

analyzing the channels correction of the local and galaxies but papes form-Clags has extended the work's importing the victaries papers and creates that associate windows into the earth's haut the hast classified mit victaries paisated fream cores from the Classified and core caps the the millies classified and core caps the classified mit victaries where the particular terms and the and the classified mit with classified mit victaria the vicentified galaxies of the classified mit the classified mit with classified mit victaria.

The guardise of stage actions who owned a fractor in Blanck Drag task mature behavior the locations for the transformer of the locations for the mature behavior of the model is a contraction of the location of location of location of location of location of locations of location

Crag onlered graduate school in geclogy and spent several sammats with his wife. Valurie: field-mapping and same alea araties in Wictima, clearifteri He then approached Unev for a these drocen and owcen having already came entranced with the study of so scores atoms of the stame element that differ in the numbers of neutrons in "gave me a chance to look at rocks ter diamonds metaoritos-everything on Earth." Indeed, for his Ph.D. cleaser tation at Chicago he analyzed carbon inclosed in all these diverse substances so thoroughly, according to bon in reture " Orag recals When ! went to college I wear't sure what so ence I was going to concentrate on This uncertainty is something that a work in different feiths-geology goo

His sum in the New left him faschuied by the sea, so when offanida a job in 1965 at the Scripps institution, he sumped at the chence. This faschishin, pertoukerly with places where this occur means the more nexth, led Crasp.



To what may be here most emportune dacovery in stellar and Bairu Clavar, han a Borgan colorague, have da here and the second lange of the second se

Drag's global studies of helium 3 and other soccess have semed him the vetoses parax, the rightst avaid in earth sciences, and some colleegues sociam him as one of the live invention of modern peochemistry.

Bit Lawon interviewed Croig at his La Jolia. California, home and his Sonspe lab, where his often works from here ny, until the netry house of the morring. "By the time we wan forlahed." Lawon says, "hiwas roady for a long vacabon But Cross could have one on borwert."

Climit is there something anothing all about your unge to get at the earth s deepest socrets?

Eng. Perhapia, but I don't know how to explain a When I'm 24 sec. I go cut on dack at inght when no not we there and experience is deep physical fault mig. Sometimes I tak to the coordin. It is the same when I'm citrating a volcaria to get earning as lat to the coordin it is to get annybes. I don't have any breakt left because of all the smooting brangs. I test a centain prote that Two been able to or it.

Onni How did you end up setting on the erupting volcent?

Draig: We were in the Austral letter dam, which even in the southwest at an underwater volcance curled Mac Donald Seemann, tracking huge plannes of helium 3 writhed from the last Pacific Res The Coolin at the seteman set of the southwest at the southwest encould letter bases from writer the strap. Danging hard encough to make the strap. bases from writer the strap. bases to be weak host in darrow function to be weak host in darrow func-

We put the ship into the model of the green suit, and when we are a Kubtee corring up, we must be put the ship over a and send a hydrocest (for sampling water at different dephilo) down through in-harpoon the bubbles Bombs of ceed block two carms teeling up too, and bacase hay were so her and full of salesm they receted for

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Motion minutes or so. We managed to net one lava bomb.

Oner Wasn't this dangerous?

Crag Myon, a visitorio coste of a on angoto in thick with a ship but of Japanete convergence in the beam of the second second of the large second barriery on the large second barriery on the large second barriery on the down of barriery on the down of barriery on the down of the second barriery on the down of the down of these have the down of these have a barpes in the down of these have a barrier and the down of these have a barbon of the down of these have a barbon of the down of the down of the down of the have a barbon of the down of down of

Crim: What's the difference between hy drothermal vents and hot spots?

Graig: A hystethemal vent is a lissure along the middoesin ndges or other places where seaflow spreading is going on and new open out is forming. Seawster is flowing down into the cracks and getting heated up as it spreaches the active magina. Then the to walk risse and lises out

Now, a hot spot is contenting else As the big continental and oceanic plates move-the Pacific Plate, for eaample, is moving northwest—if exists a continual accurate of material at a point deep in the exists mattle staffs punching its way vertically to the sufficer than material punches hales through the coather outsil like a sering matchine has de alteching to the other and produces volcances along a line on top of the holes, as the H steason chan.

Hydrothermal versits don't gib very drep. This solver magna it hal haals up the ware is only a two kilometers be the Goan His often itsen. The migority gainon, however, is that this topols go wall down His the minister. Here may have the down His the minister more harves that did kilometers. Many papele ross balave these that did be way to the boundary balaween the mantle law to the one that's a digate of about three thousend kilometers, about hat's war to this centre of the safet.

Deep Her can you till a hit got? Deep Care way to block and the sotops (Care way to block and the sotops ratios of the suit that comes up for example, her solo of her will all blham 4 A printed all solidays allowed in the doops of any of the saint at the time of the solid block and the solid miting for the same her probable doops of careful the same her print ratio of her same the optimum the categories and the solid doops of careful the categories the ratio of her and post mere the give es are corring out discoled in seaveties. We get the Agreen rules, it he most healunt 3 compared with healum 4, at alloces that go descot: not the sainh-Al hisses land in socies of the hot stop. I heal health and in socies of the hot stop. I health and the health Coence, the nobus are the highless, stop in they interes arrounds, postere notineed on Each the and the back correction. This is he nonparative the highless, stop in the arrounds, postere notineed on Each the meticle. Of course there also a the intertion of the stop of the search and the interest health back correction. The search is the intertion of the search and the stop of the meticle. Of course there also a the intertion of the search and the interest head back of the search and the search and the interest head back of the search and the search and the interest head back of the search and the search and the interest head back of the search and the

Omer What was it like going down to the Lat's hot spot celders?

Grag Barron Left is a large grave injuries shares to be found in the pretine barron is an action. If the pretine barrow is a strate in the prerest of the first inducement of the wars status is bring barrow multial and reference concertations in table assessment the strate of the status and on definition of the large strategies, we have here multial strategies, we have here indice the large strategies and could explicit financies and could strate the large strategies and could strate the memory as a strate of the strategies with which memory as a strategies and could strate in the strategies and could strate the memory as the strategies and strategies and memory as a strategies for the could be memory as the strategies for the strategies for the states of the post for the strategies for the strategies and memory as found for the strategies for the strategies and strategies for the cound found for the strategies and the states of the post found for the strategies for the strategies and strategies of the post found for the strategies of the strategies of the strategies of the strategies for the strategies of the strategies for the strategies of the strategies for the strategies for the strategies of the strategies for the strategies for the strategies of the strategies of the strategies for the strategies of the strategies of the strategies for the strategies of the strategies for the strategies of the

From the makers of Jack Daniel's...

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Chief A very vacestrag and smithalbeguy, here were frogidan beging here and has ean Phraper on the Ceraon and has ean Phrape on the Ceraon and the same Phrape of the Ceraon and the same phrape of the hed been en optims smoker in Onnadowners to be all over sold. Phrape dealers were all and sever sold. Phrape dealers were all of all one phrape people are not aware of 1 am a people are not aware of 1 am be the best memory and aware not an aware not a the seven seven as a the seven of t Inity Lickn's use that all all soo then as a man with anotal franche meson to explain to poople what we're dong to be anywhether L'is a Seen storagy out to anywhether L'is a Seen storagy configurated with community and the the been primarily responsible for a list of list assistivity in unamal even the has been primarily responsible for a list of Owner hereit here any manifest that the deep instal of the centry meantains that the deep instal community. 'mountains, 'man en occurrents', 'mountains, 'main' community.' mountains, 'main' community.'

Orage, Right Hennist end Chaster people for umor CAT (Descriment week) cancels to lake it con-markter immediate to below week of the second second second second rest interpretation to the activity of the rest interpretation to the activity of the second second second second second second rest interpretation to the activity of the second sec

Integration of the Allatics from the anterposed to the anterposed to the allatics of the allatic abby Naroy In sharps of the allatic abby Naroy In sharps of the allatic term of the allatic abby Naroy Integration (Section 1997) and the allatic abby Naroy Integration (Section 1997) and (Section 1997) and (Section 1997) (Section 1997) and (Section 1997) (Sec

We also defield some ce cores to uso large amounte of uso to budy the carbon isotopes in the methane. They showed a recent increase in C-13, the heavy carbon isotope. This increase had to be due to burning of wood, the only ocure of methane that high in C-13. The burning of the world's forests coertuis or weak as

drudgers; moving the Alvin around at a lenot or so and linding nothing

Probywe found robes competitivity and there is no the tools, where you for the mewere conversel with a shear here. In the beam appeared is on nonder-all hydrothamsal deposit. When we there is paisticle, and possite flow up in every direction, where compared you want avery direction, where we heready isolated the worththe water compared you want avery down the operation of the sup on every direction of a nose on here pain. The were commend to mark cannon disade that a wais damate than the supre-indep that are directed the supre-indep that are directed the supre-indep that are directed that the supre-indep to difference.

Dave to unaverse the transform, you make the transform, Not combinely. When you're dawn them, you med en't make's head that the other services and the services of the object of the services of the object of the services of the unaverse of the services of the your the service of the service of the services of the object of the services of the predict beaution of the services of the services of the services of beautions of the services of be a column of material that hed puriched its way up from the boundary between the mantia and the core of the earth, thousands of kilometers below us Ones: Where are hydrothetmal vents

Datasety Dentity used to be a set of the set of the set of the set of the set of version were unreapy specialized to a set, where the plates are inpering special thream. But a low years ago we took Anor the set of the set of the set of the constraint the determines there in a basis are basis, an active are basined an attic plates, and set of the set of the determines and the set of the determines and determines the set of the set of the set of the basis of the set of the determines the set of the set of the set of the determines the set of the set

con Describe the vents

Grag. In the East Parche Tass verse you ask hild otwarn and black oxides and suffats, on tips of which are often rugs growing the to twenty middlin. High They look the gains candidations to one han the lending of being in a citectral Some of these otherwise have versions black suffats "smoke" spouling out the tips live geyses, at three harverant shadk suffats which we can dired and the you're stifting on the enane of the outfit.

There's lots of life; the vents are ou-

At Loss, shough bleve will almost he into, accept a very funny finnt with a small body, large from legs, and a great hugo generg model. A set function mouth gees, and lets all the find funcion Wa remark at diffs all herefolders aneuton of Bongps at the term, who hea a neutration, training the term, who has a neutration, training dealers, as having the high set mode of tableng to listening in occampathy.

Other The French architect Jacques Reagens tonsees colones living permanerity on the ocean floor. Do you think that will ever happen?

Criege II could certainly happen, because there are enough people who'd



Our very own, very special recipe for sippin' Jack Daniel's in the summercine.

MCK DANIELS (VNCHBURS JaLMONADE 1 Part. Jack Daniel's 1 Part. Jack Daniel's 1 Part. Triple Sec 4 Parts Sprite Add us and stir. Geneth with lemon shoes and directes

Residue Monieg + 1912) and wile approximation of a point of the lattice of the la

● The Thystery Soud was seen by more than 30 people in five separate uities more than 200 miles apart ●

ANTIXMATTER

The service and the service of the s



UFO UPOATE

roughly hallway between the stats Acturus and Spice. Reft calculated the could to be at least 700 miles away and nearly 350 miles up

The cloud reserviced a gas elesses from a sounding owner but a large method with a sounding owner but a large method. We have seen achieved and a Standard right with southered thanstitutions towards and anyout the curve, Show saided than when Standard Mattale Allings in New Medica and hanned allow, developed by the star-ways program to the bodie see, developed by the star-ways program to the bodie see, developed by the star-ways program to the bodie see, developed by the star-ways program to the bodie see, developed by the star-ways program to the bodie see, developed by the star-ways program to the bodie of the true. Other with NAMA odders Spons Fight Cours ways the NAMA odder Spons Fight Cours ways the NAMA odder Spons Fight Cours

"It's also unlikely that it bould have been the aftermath of a fineball-type meteor," says Relf, "since most meteors, disinterrate at lower altitudes. Put none of the observers izunches But then, there is no international convention on receivening such things. You only find out yours later "

Balangeally enough, Oteng had his own rrystery cloud appling pat a couple of more site FRHS to Obey was taskeortheaning with the kds on Hatowean when, he align they saw "gate is strange visual phinomican Them were a bit of clouds in the kdy, and his object belied to me like a policy physicing on the bottom of the doud deck."

initially other reports from the area confirmed that the object was far away. But then "a very good observer just north of Oberg suid that as he topped a nise in the highway, he could see anishing burn off on the ground, if was the observed, both on our the could first by above

The story holds a simple lesson, "It process the importance of watching for anomalous phenomena," says Oberg. "The more that people come forward, the satisfar if is to find a solution."—PRI/RICK HUYGHE

the time It's clear that there was something in the sky, but the question remans. What?"

Jamba Clarg, an Ine angineth an Ine angineth has made a lineorid class out of angineth has made a lineorid class out of anginetic feet of the second second of "these attractions of the second second different a beams blasse beam a beams blasse beam a beams blasse beam a beams blasse beam and different a beams blasse beam a beams blasse beam and the second traves and they have no second



PROPHECY CENTRAL

had been in investigation across the interface with the interview of the Maniputation and a structure with the production of the Maniputation and Armstein Production and Arms

northly newsletter of his predictions, also asues An alter Lesi fait a diversity of a constraint An alter Lesi fait commuty information and a constraint in the stock market on Nonember 20 And three walks balance the govern ment of Romania toppied mut Described mession and a symplectic toost in the stock market too photowski "would take photows to parter Rise countries."

Search 5 methods and conductions have yet to convince professional soctharyers. Ke Manin Cetron president of Fore casting International, an Artisigtor, Virgenia, consult ing finit on future trands

You can by using crystal

balls and chicken entratis to practicit the future, says Cetron. "You can alito take five quick dricks and prodict anything But It wouldn't convince our clients. You we get to use quantitative clafa. If Several distributions is the

The constitutions were consulted for advice but no site understood them?

and "



International part that power us about a travel computers that could shore a to 600 megadysis of information, a supermitted voce gave time is message. These Do The says What Do The says What Do The says What Do Clears, was purching a bitmary of Ebbs transistoms and suppression and

Ets: a physician who also tells computers mow pubtells and markos the Bhio Ubrary, a D1-ROM (readonly microry) data for personal computers. Through his Disbitoria Otri



based bits Entoppicos. The design contains prevailing of other contains prevailing of others contains and concontainess. Healtwark and Consta accountains, carritori toppis, Australians, and mension in may all others and prevailing and any series intermation. This says if a fine agravation of a stack of books, three across, their work and the prevailing of the ophics

Though the Bobe Library seeks to 5005 and request on CD-ROM drive, Ellis says has most buyen, are hypeople active this schol are an instatus. "I loss helm look up the facts, compare the original languages, and make maniperi debosons says Ellis, without depend of pomerse elementy."

Has Bills pationally control anything away from working with the Bola Lotreng? "Web, the word pace between the bills of the Wing James Western but its called don's of your own whether minibig results when you labols is up on the organd language—Hitbrow—your melicite the only thing you can call it as pectime with the King James we with the King James Weston Tis an honest threadation —Sheny Bolavie

AUTISMATTER

NUMAN INFORMATION

During the past year accurd 9 500 French off tensor share break of tensor where a tensor tensor tensor and running and unique of the value regregory between reger tensor of tensor of tensor and reacurd by the tensor there are parts and an activity tensor tensor

Why would alryon wark to jush Wheel into a human biodorida of sheer tander you historia of sheer tander you historia a sheer you throw yourself avor an abysis apporter by ourses an incredbio runh Bartsis snys Franch physicsan Xaman Managaet has baind that

pattports pulse rates can soar to 200 beats per minute even before they begin their Net-Carl-carling the polarity by that the spart could be develop for people with hear problems. Warnings about the dangent of becoming a turnary page transvertione done-liftle to dampen the popularity of the transvesion spart. Both "Sector polarithment has anowed to regulate the advertige when that ban it

relatively sofe places, with set inequal artist for the set respirit artist for the servers. Bartisk ways "To elatio rope must be the proper length, and the path of the jump must be fee of any obstaces."

And since sofully protcrimit have been possible to truge expends that come to watch the human years. The government is beining propers from passes the progens from passes the progens from passes the progens that a soful and the government of the propers from passes the progens that progens the progens t





THE CHOICH UNLESS OF

No one knows with was vaponable for sculpting the unarkable strine statution inst dot the grazek hills at the Celemban runs of San Agustin The soughters and ther contention of supported there contents the Sonnth computer the second statution of the second statu

But now a new tenal to the mystery has been added by Kestett, a Belgan ar chaesteg cal journal. In a recent locus, two archaeologata suggested that Vikings wand the site and bat ther own engratic mark

presented in the 40-page

Intelligent basevered Viking formys into Stouth America is a photograph of a statue at Sen Agustilis on which Nordonika runes are carved on the hospidmens

Common bothwardspatt Theodox Phrass, who worked at the site in the marketige were profile in his book Phrihestanc Monumental Art he patisland mo phetis of the status in question, one with the runse the pheti without, and wrole Some location is our three must neve carved the runse on the status

Paymond Camby, a coau ther of the Kadamarticle. He Indees with a potarie of the datase with the resistences gliphs appeared in Runs of the United Status of Colomba by Agostino Codeze, published in 1953. If burnals conset those runne, they may have been Vising tourists, Camby mean sets. —Reb MacGroger

*When you re all alone seading, you wish the asthothat wrote if was a terrific thend of yours and you could call him up on the phone

D Salvoor

A post a har is so shong A runs make

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THE CATCH

two to the detect. But the Chaikes brough the global making can be made the whereholders are satisfiered that beyre beginger the whole is call indiscate that we have created, our terms and gardene and so furth Su they agrined to make aplightinget the Hbeyr Land of Clogging, where the theopool live and broig some back to gain miltrea under accession. And no, the name of the place and Skoglig, either. The tying to find equivalence.

The Holy Land of Glopgip is approonly very far away The Ghostes are not swit havelers. We've been weiking a lowe time for our honooc bace.

The whole valey is whete with mixel lists. Nothing can grave have now built the whereham isse. The logosi is porsoned with caustic sode and the ground have been sucked by periched clear down to what used to be the weter table. The whoreham had statisformed our pretry valley into the kind of haveful environment that labers leaves.

A sea of pok blooms sways gantly in his brazze. Brooch branches glow (ike the porcelain Sweet lowable title sproutings come up whanaver you look, tris all terminatily breachul it brake way been this me fi 3 Suthmonth 2217

The pagemis have returned from diopigy with herbocycos, solven bag webeneoit tasks of them. They are be most indexis intexts diod ever spawned as long as your middle for env.with yebs ecospon tasks and shimng and basis ille tacon and hog bulg tarmesoten gream syste. In the right, pour calls, solve them could be web tidls means them can be

The one thing they are bossiss upt is vocablow. They have to est, and what they wait an intersteam They attraction they and the state of the state with the state of the state of the states, and when they rated the states of the state of the state ground lead they lokes the total doep into the dath, chroning on and in unground and they can find Than they ground are the state of the state of intermation have a find that they ground are the state of the states of the state of the state of the states of the s

In the fact weak they are every whitewhen along the existen side of the valley teem Boundary Line to Town Hell. These they asside to work up the indidie of town, heading weatherd a feedsy seeming arms/A execution birelation of bugs and a third head handhed by their, and they we at work of the edge of the plaint, where our families hard used to be It's highlening to waith them Tropy wate no hostages. When they finish with a withmester. There is noting for of a subject to the second second any When welcose of lower as totally withmester. The second second is totally withmester meeting second is not any when second second is not any second seco

With the whimwhams all but gone, the value looks strangely block and berein. But we have had some rain looky, and the sodium hydroxide cruits are beginning to wash away. Here and those, a few little green blaste of normel plants are starting to polive through the social or the soci

Notify we share ymbors, warna to the carange to and Nobody wards to ael tool custob who scuttering arresstion of their hybrid states of the scattering the the land. We low them for what hey're doing to the wherwhoms, but you can't help teering disguisted at the sight of them. And a site in highlend 50 we wast i Resumpty, the toogoto will also come the last within the highlend 50 we wast integrated in the site of the site of the site of the teers are within the site of get teers are the site of the site of the teers are the site of the site of the teers are the teers and the teers were the teers are the teers are teers are

The food supply is deopting prefile (so here. We loot our whole sensor's scap, abar al. to the whometime term, abar al. to the whometime term, but we need to got out the and samp interesting sometime goon now that the rame have even. The question that he rame have even. The question that here any have even. The question that here any have even the question of an

M Exchitrmonth, 2217

The best summer rains since we came here Terrific weather for the more except there are no crock.

The whimwhams are all gone. The hoogoes are abilities. And still hungry

"Doin't you say "Bud Green's asked ms, "that the Ghosties fold you the hoogoes don't eac anything but when what usas? Bo when they're eaton all the when what they is go somewhere else?"

"I closift remember the Ghosties tell-

"We assumed is didn't we" raid Bil Gannet. You bring in one ecological plague to take care of another and it goes away when it does its job. It makes ecological tense."

"Yes," I sed "It does But that sn't what a happening"

"No " Bud Glasnik said. "That isn't what a happening"

What is happening is that the hoogoes bawing completed their whenwhen samplement had cable all the new summer veptation that had come up in the places where the whenwhenis had been that didn't less long But they will est engling Anythen, They als some of our livestock. ract, as much as they optimities to be fore we soaled the pens. They also free cats and most of our dogs. They attacked. Mile 2hi/kov outside Town Hall and stateed his leg badly enough to recare surgical report.

Flanditioeets stop hem but don't stop eough of hem Nutling wo have would probably mele our land will uit too, for years to came Will have become presents in our own houses, with swems of angrip hungy hologooi crawing up line wildi, looing for the war no sch litbe; con evel up med

Question. Are they asting Chosings. too? If not, why not?

The Obodies must have known what hoogcos are live. They wouldn't have becapet the onlines from Gioppip and turned them loose so clear to their own sentery if they diciril have some way of controlling them.

Terrenziw Will Norefland and Bryca-Tesk and Will ward paid table the land crusper and rate across the plane to last to the Chostean. If we can find there Ard saik them what they tents we coget to do to get not of the hoopconnow they the hoopcon have taken come of the whitehrands. Boccase with getting very hongry and we're who perify extend.

29 Explotmonth, 2217

"Oh yes, 'the Chostes told us. "The hoogoe has an energy, indeed yes." The ubub bird eets the hoosoe bug."

The pitquit berd? Well that's not roally what twy call it But it! do as an equivnext, TT press to do.

I ssad, "Where can we get some jub sub birds then?"

"They are also found in the Haly Land of Cleanin

Will Nordland pulled out a mepcake. Show us where Glopgip is," he stat.

"Oh. no, how can we? It is the Holy Lafet"

"We need to go there. We have to get some jubulo birds."

The Obustios conferred No. they sad, it would be sacringe for them to to 1 us where Gloppico is. But they would globy go there for us and bring body juliubs for the horgooti, just is they had thought back horgooti paid is where hans Yes. Globy

"When?" we selved

"At prigrimage time." they said

"When is that?

"When the year has changed," the Ghostee said

"That's five more months. We pain't well that long. Could you make the pliormage now?"

But that would be sacrilage

7 Developmenth, 2217

The Ghostes have taken pity They will set out a month early for Glopgip, and with luck they'll be back here with some jubgits for us by early spring. May-

Something occurred to mail a little tate in the game, later right Theos solpublic and hospoor and whitmetham and all frequent is and table to this part of Bryoph's Word, then withmethates aren't entire Southers and Halake Gametic gat the whitmethate calling that the of all our thouse in the finite place?

I saked her that

A Double gene it to me, also where pered. There reams era har eyes. You won't hall anybody, will you? The double brought me parts all will be of a outling, and similar the way they? artis, and back is wain a very theotal get, for ms, because my genetin was jou and in your to be a set of the framework.

Bit low returns have a fally intertion have found with a source of the base of the source of the source of the base action there is the source is the source the source of the the the source of

A platoon of hoogoos is scribbling across line window right is front of my nose as I write this, trying to lind the way in to the house

All right Choses Bring on your jubjubs. And alterword, I suppose you'll get us the lighting rait to laid the riggs of the suddenly tamble jubjub. And so on and so on I can hardly wait DO

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TROUBLE

CONTINUED FINGH PASE AS

"Now give two something in return Your mediate."

Accepting the mochete, Turni sumad be back in us -

"Let a go while he still thinks we're

In entrol to resk why but least steer is and an Lonavida of the Int betterf Monest Developme darked at us the state of the deem helding better. Used with a steer booked stowy across the carror, these samed teseatt the local: We of almost mandful the adjue of the cleaning white main the steer is the state of the cleaning white main forward the local: We of almost main the book of the cleaning white main forward the state of the cleaning white white the state of the state state of the state state of the state of the

fremibling, I sook the bow and anowe from the boy. Then we turned and stepped back into the forest

Since then I ve returned to the jungie several terms, ending each inp with a war to Turn. I ve visited Metres camps on a dozen were with Morele We've always tied to come and go as spirits, not bringing throug they don't need or taking throug they don't gave

Not the gradient induction towards in straw Massis respect to the Names Network respect to the Names Network and the Names Network and Network Network of Network Network Network and Network Netwo

Then we found Turnis longhouse burned to the ground and the pueble deserted except to the young manweld that excountered in the jungle. He had grown up and built a soporate hubegan wennig these and long purits, and now went by the name Arthono We assed what had happened to Turn.

By tathet is cracy, Ammo aad in the petar Boards he had loaded. He burned his house and left everything here, all of the Hings pociety trought hern He and he wanted to funt and gibh er and left in the pungle. To be a Messes again the sign he new knows you and Mostes are bod spirits hos brought the touries. He should have sitted you are how to bot



CONTINUED HIREM PROFE DO

sch an attractive sile to colonize. It took an unorthodox demonstration to settie the matter. Manthal availaveud a batch of Avacabactar—and promptly came down with an acute case of geninter. Biopages showed that his stornach was informated with the bachtarut.

Although Nurshsi made a tul recoey what two weeks, another doctor with volumeared his somach to soence was not to fortunate. Three years also consuming a hakadeate culture, he call had a belly full of the bug. What thistly cured htm? A whapping basis of antisectes and a lot of Pepito-Bismol

The bod arrange to enalcating the organism encorposition that them hanorise remedy for digethere its An time to body as 10% doors ashooland asile of barranty too active registerial relation of the anti-type active registerial and the active registerial association and the active registerial association before the second to the active related of Papelo Hand Intel Intel Antitation of the Anti-to Hand Intel Intel Network of the Anti-to Hand Intel Intel Network of Papelo Hand Intel Intel Antito Hand Intel Anti-to Hand Intel Intel Statist of Departs Intel Networkshop

By itself, however, a saits of bierrwith preparation can keep the organism if check only by temperantly reducing its rumbars. To compliately clear the got usually requires a course of two arithmoticslotics-listing-yoline and matematicabletaken diser a two-weaks ported.

Although compounds like Zenica end Tagenas, which relate the and canato Die abdoese private receeytom Uces: herefet a usaby indetwad. The germ marafaby fathet up gen "Artado dug are a terement, not a com; tage Manhal, "Repair de gene see cambioater and the second of die to like". The advancego of the gene see cambioater and the second advantations of a segment shuft ethinrules the decease at its score, grawing reducing the handhood of a talepoor.

To prove his point. Manahal recorded 100 ulicer patients leading politike for the bug and neidoming assigned from to two treatment groups. He reported and the records in the Documbar 1056 islass of the Brisch modical journal Lander The group received with basish-neitenic themps hed an 50 percent corts nata a year lister. In contrast, 15 percent of the group necesing any lagarest of the group necesing any lagarest

Dari' sispect your local physicien to ofter the antibatoc themapy anythm soon however. For one thing, the only too for Anticobacter currently wavelable an endoscope through a potent's mouth and deen his exchange to ob-



tan troppes of stometh or intestmal arsue. And although blood tests and breath tasts to detect Helecobecky exst, they renot expected to become commanaely available for two years.

Furthermore, respectively are kiely to lose continued matabasics from mainassaum practitionata. We've sport the last bevorty years finning that excises and coursed gearning and ulcers, and but and barries to the second droter of endocopy at the laneating of Mathis School of Martine an Occurrenting a trained of Martine an Occurrenting a trained barries of the control method thousing.

The artification sportadn's is studied; to some physicane basevalle (i) forduces aware to de officion-including percent, of paralestic in the studied of worth the nod of an adverse restrict of the ution or operation. This proclades sportading are midi, paralestic includies are also and the studied of the studied sportading are midi, paralestic includies are also and the studied of the studied of the studies of the studied of the studied of the studies of the studied of the studied of the studies of the studied of the studied of the studies of

"Antibacto theory is all high commention," capital and the second of the second repending, "capital and an antibactor of the second end of the second effective thready to test end of the second of the second of the second second of the second of the second of the second test of the second of the second of the second test of the second of the second of the second test of the second of the s

Undoubledly, before antibioties will soon be awalised. The shear and of the uboar market has made barrishing the bag an obtened y attacker research taiget in the Unset States along 10 percent of the population will suffer from ubors at some time in their adult hinks and many more will develop pathts "Its the most common infection in the world" uses Merchell.

Parturakity, most poople have such low-level indications that they never dewildon symptoms. But the gener blackty around the globe "Once we have developed sale, more directions antibiotoci and provedt theore are generation and gener. The attemate goal may be to vooorable everyone in minory—patilities we do for pepter "-Restities Moultifu

For more information shoul the process of testing for and institute Helicobactic pylon infections, call the School of Madicine of the University of Vicentia et (1001-924 9970

COMPUTE

GAMES GET DIGITAL THE AMIGA 3000: A MULTIMEDIA MOISTER IBM'S PS/1: BIG BLIE COMES HOME IS CYBERPUNK A THREAT TO THE NATION? PORTRAITS OF THE ARTIST AS A MAC USER



EDITORIAL LICENSE WELCOME TO COMPUTE

The complete home PC magazine. From games to business

IBM course hours again surgh this summary with its introduction of the PSU, Big Black fact construer prodtok stress the PC Jr in 1946. The ronatarabard designs of the PC Jr higher-priced huminass machines. Consumers found the PC Jr leves higher-priced huminass machines consumers found the borry deep of humo computer bindery. IBM learned his beam. On this wryngs, learned his beam.

Apple Computer, a home computer or prenser, staked out its ownchain as the consumer market in the carly Rightnee. But eventually the kole from Capevine, Californie, abandional that claim for the beentures of the Fortune 1000. That assures sured the Marmhosh back lost the hearts and minist of masumers. Now Apple as faced with the difference BMM faced in 1964 hear to dalower no manpensave bot fully functional computer that will attract argumment but wor't have sains to busanesses.

The home computer golaxy revolves around this axis of complexity and asceptity. During the hast axy pare, the most domain down to coment up present on our down to solve the second computer hadnalogy has been the ruse of secondby fast and powerful motelunes that are, without enception, station that are, without enception, encountion and the machine american An invisible machines, one that tion while it brings down the barriers of access, is now more than yout a dream

The pawer-simplicity connections are also the reason you find this is and of Comparis match from the pasing of Comparis match from the panishing of the particular sharing and fascowing, any strating transmission are enhanced in a particular to the strategistic strategistic strategistics and the strategistic strategistics and the particular and reasons also believe in that mission. In Deduker, Comparison of again he are in the sensetarial match to your multico, higger ond believe heres again—bette formero



THE COMPUTE NOEX

The 11 top-solling personal computers in the United States. BM 562, IBM 30 284, Commedere 64C, Apple Mac 88, Apple BGS, Apple Mac Plus, BM 558X, Atom 120XE and 66XE, Commoduce 128 and 128D *

The top sum enformer podeagent Wordperfect, Marsonft Word (2008; Intail Quoton, Control Pount PC Tools, Lotus 1-8-3 version 2.2, Lotus 1-8-3 version 3.0, Meroneft Eurof 2008, Anhon-Tate dilane III Plun, Microsoft Works (2008 *

The number of FCs worldwate: 72 million in the United States, 85 million in Europe, 12 million in Japan, less than 200,000 in the USSR, 21 mil-

> The number of computers in the United States used for work at home 10.5

Hence PC uses in the United Status, 021 prevent for gamma, 56 6 percent for objective, 52 0 percent for oblacking, 52 0 percent for oblacking, 50 1 percent and for observation (second status), and the percent observation of the percent observation of the percent graphs, chards, and tables, 32 4 percent for maximum to percention, 36 7 percent for to highering and financial the observation of the percent of the maximum terrest of the percent of the percent of the status of the percent of the percent of the status of the percent of the percent of the percent of

Percentage of U.S. PC ewases who bought their latest machine during 1969 18 §

Percent of U.S. PC owners who strongly agree that by 1990 nonputers will have a greater impart on us than TV: 47.6 r

Percent of U.S. PC swners polled who strength agree that thus are increasing agree that

Sources Dsinguest (*), LINK Resources (1)-



IN FOCUS REDDY'S MACHINE DREAMS.

Tomorrow's home infotainment center may be less than a decade away

versity in Pittshurgh, altaned office at the univermail to collegroop in Paris, Tokyo, and California. nology, Reddy belowes, will foster a resiltimedaa opoach other text, speech, have This new hardware Compate: What near-

Reddy: The first is the development of the so-celled 3-G machine. manco in billion instructional perdem-access memory, and a gigahs to of data-bus handwidth. By comare 3.M machines, as were workstations of the early Eightnes, such as the Microvex A 3-G machine in than a S-M mochane

Compute: How close are we to seeing 3.0 markenes in the bound?

lar ner MIPS (militon instructions per second] barrier, however At musent the flastest workstations you lars par MIPS. This press should fail to three hundred doilers by the will pay ten dollars per MIPS, and



five years after that a MIPS should go for loss than a dollar ful machines, what will we de-

Reddy: Propie often ask, Wheneeds a 3-G machine? Under the right corcumstances, every man. evence or education, the higher powyou cen't type, then you will have to talk or write in longhand to communicate with a machine. This

Tiday you can purchase a highdead dollars by the year 2000, an-

summer the sales volumes hop units per year. At sible today. We will need this new software and inal demand the such equip-

For example, it would available at home in fall no it griggide invettee hon trees and also allow me to keep the magazine and to nonce shierresten retriev.

shat prevent me from do-

also need a much higher bandwidth for sending data between machines maps nevel without photos takes about a megabate of computer stor-64K bit ISDN (Integrated Services Data Network) takes also forty soand color may take about one hunship. This is impractical because 1 zine We may need a transmission the next level in phone line capacity, which you could get for a small connection fee if fiberaptic cable want into every home. You could then a minute -- Then Depretativ



THE ICEMAN COMETH

Are role-playing games a threat to the nation's security? Plus: A Mac attack

Flavry subtrokk even over kole of flavry even over her has been been even over her has been been all the reality wanted even in the works around even mopr showed averand even mopr showed has a showed avera in a A. I. on a vitalitabilita

Welcome to the weird universe of cyberpudie, where all data reside in a vasi global metriz. Knowledge as power and stealing it so hip bustness. To asfe-

guird informational transure terves the big boys create i.e., a cort of killer software that attacks backees and deatroys their minds if they get exught

This is evidence flation, of course, as averyone who knows anything about other the genre or computing understandia Everyone, that is, except your local US Secret Service employees. They appear to thank that cybergenk flarstore poies a threat to national security

In March of this year they mided the offices of Skow Jackson Games (SNG), a poblishing company specializing in rule-playing genes toffware airchir to Dangeros and Dregors. The Feels confluential a number of different items, meltiding computers, peripheroite, and opprysche-related documents.

At the time of the raid, author



a book estilled GUEPS Cyberpuxi, a new madale for SGCs Generic Unversal Stale Papying Systems Write Blanknashig did interview a manber of camputer succerity expertiand self-proclaimed backers, the book container fortune. background information and statistics useful to: to GERPER observe

Aborts is weak before the publication was to go to preas, the Secret Service raided SAG's Austan, Beor, efflor, coefficiently electronic bulier systems, the farm's electronic bulletin board system, and all hard coples and backings of the manuscript

"After the raid, they were making comments about the book, calling it a handbook of computer crime," Jackson sold. "They very clearly throught that the book was for hasking into computers, which is like solying that Durgeons and Draggens is a handbook for brook. ing site dangeens. These people didn't understand the technology they were polyton."

Jackiesen sand that the agents have elimined this hopk was not the target of the reid, but at prese tans the original manuscript and compaters will had not been returned. Assistant US Attorney Bill Cock has dedined computer generates as high places as a greater threat to say meltional security then orderzank.

-Denny Atkin

MAC ATTACK

In a dramstile policy shift, Apple is preparing to delver changer Macintoshos The company hopes that this new stratagy will allow it to capture a signifuant share of the concervreined somether market

Although official spokasses for the company refuse to decrease my class to Apple reveal that case of the mass computers is a shalese refulling Mass with 2466 of BOIM, one mapsples of RAM (expandiable to four mognitystee), and a single three-anial-abuliced forces gives

The matching of the set of the se

-David English



CONNECT THE DOTS

As games get digital, they're sharpening up their screen images

The Holi Bills his opport, Born, dy Swage, hap, worthoad in a spin, whirds him around, and alarsh him is the carrase. The picture on the senses, although does not har a spin does a weat a light spin does a spin does a portal Morecurgue Wrenthing. Insteed of representing the Huildist Spin's and his flow was a spin and his flow was carbon characters, they provide used digitized these oned parade with His His malanes.

The software is one of a growing number of new computer games that use photographic-quality graphies to add purch and power is their visual gresentation. To accomplish that, developers convert photographic and video images into putture elements, or pixels. "We



opent two hundred to three husdeed hours pering over wreething films, looking for specific moves that cortain wrathers are known for," ours MicroLeague Sports preident Neil Swarts "For Hulk Dispon perg sparset Randy

Savage with an atomscdrop, we might look at ten to tworly diffront matches to with the hast neo

Converting video mague is not the anly way, however, that estimate developers have nided realism to their graphics. Some have turned to still photography of alabrestaly staged departons of events a their programs' plots

Orms Have, from Access Seffware, took such an apprasch. The company built sots, kined actors, and retited powerful movie lights that were synchronized to a 38tim will cancer. Phylographers then used specially modified Nam still cancers to shoot actial eccess from the Orne Way stoles which reviews around efforts to reacce the Prosident's daughter from the elustobes of a powerful errors syndrasia "We devised are mation sequences, and those were individually digitated," says Access president Brace Corver-

The game uses more than 300 normation sequences produced in the fashina. Accessive designers project of the Stame transportant of the intervention of the sequence project of the Stame transportant of the digitalitatic process. Carver used a program from Autoidos calidá Autodos Autoinatos: "Et a reality ution ties that allows to talast these intervention that have allow to talast these interventions apple, conduct their patients, noningution theorem and the patient of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the region of the sequence of the sequence of the sequence of the region of the sequence of the sequ

A-10 Thusk Killer word David Mill Score Agont, Horn Dynattice, mannade Sore Agont, Horn Dynattice, mannade and stall graphic images in A10 Thusk Killer, Dynamis and graphic stall graphic images in a star that the computer, and interplation of the computer, and interplation of the computer, and granuth, "says Level, there is the star of the computer, and the star of the star of the star star star of the star star

For more information about these products, testast. Dynamia, Bas 11800, Kupran, OR 97440, (550) 345 0372 (A. 10 Fank Enler and David Hoff, Servet Agredt, Aonos. Boltware, 544 West 500 Beeth, Boundthil, UT 84010, (801) 288-8077 (Crone Nace), Micro-Lague Spectra, 2801 Dynamous Phine, Nowark, DE 19711, (302) 385-3990 (Microthegue Working)

Tree Netrol



HOME WORKER: THE IBM PS/I

Big Blue's newest low-cost offering Plus help for the DOS-confused

Almost 75 percent of American buseholds lack computers. BM boyes to change that with its PSO botte-proceeded machine. Proced at less than \$1,000 (for the low end model). Big Blue's new offlering will be sold through leading resulers has farme and Dallard's.

Date in the uniformity, regress barbon the uniformity in the barbon barbon the second second second second barbon the second second second second second influences and the second second second second influences and the second second

By burnling Microsoft Works (which include a word processor, spreadsheet, database, desking sectsaorse, area in constanticitate program) with the hardrawn. BMA has previded the lastic applications necessary to attisfy most household peeds The PSCN constrainticitizes program sho resists it tay to nor Product the PSCN constrainticitizes program sho resists it tay to nor Product the PSCN constrainticitizes product and the product of the pschement incluing sector of the pschement incluing sector of the pschement incluing sector of the pschement of the pschement of the pschement incluing sector of the pschement includes and pschement of the pschemen

Moreover, it's easy to add new hardware fastances to the computre its case idiate off with no need for special tools. Kryannoin locarin, awagned specifically for the new system, idies users to add joystacks and sound/music capabilmetra in fact, the PSU housing expends vertically-sect of loss accuator of the sector of the sector of the patterned stack of trays-whould Big Blue decide to offer enhanced innovations in the future.

BM makes so chain to have onestructed the large scattle after "infacts in some scattle after "infacts in some tax song a more more and of the source of the source of the mean important similar on that directions for more than a years one, discussof while perceptions of computers, insigned marketing stratages, and dampind marketing the directoprotein presest. "We task excerpting from ground mere handwidth mere "Ascher Ferret"

HELP

What's your DOS 1Q⁹ Here are ben crand area to best of

What does DOS stand for?

What command clears the screen?

What's the runner switch that makes a disk bostable?

Soal of a machine: Point-and-click graphics interface is next-friendly. What commend displays your

What command can display files on your screep?

What command do you use to make an exact copy of a disk?

What command can make your DOS environment lancer?

What are the names of the two files that DOS looks for what you best your system?

What's the XOPY switch that opens only files with the archive bit act and reacts like bit after cosh oos?

What command tests your disk for lost clusters?

If you know the unrevers to all tion quantimar, you're alrevidy o DOB expert. For the rest of us, there's DOB Table Older Origination 26, Glosadais, CA (F1265, (513) 1640 0644, 643.055. This hypermett tool makes DOB stay to form and may us. Hard's how it works





TAKING A LOW-BUDGET DVE

Dressing a Hollywood set isn't risky business for computers. Plus: The Amiga 3000

On the bridge of the submarine the captain gloance nervously at the imagen fishing on the more fishing on the more

"Check that sonor reading. I think we've spatial the Bovisit sub," he eimmends the operator.

A close-up of the across shows the pieture of the two subs closely-

"Sir, we've got him Bangs is fiftoos hundred yards, rustning elent."

sub torpedo status^{pe} the skopper

"Forward and all tubes loaded and ready to launch, eir," the officer responds after checking the readants on his monitor.

In the midst of a perilous mission that could begin World War III, the dopper must depend on the occurscy of the data on his screens

Off to the side are two norm just an pervous as the sub's convention. error to them, a problem with convention of the sub sector of the Contrast and Reduced Leven, computer actist and direction of the misibadget Dave' freem Warmer Reduters if trenstitung goes wrong on the berign on these forces of the side of the sub-sector of the side of the largen-which would has not of place an three consoly-adventure two scene.

It's more likely that an actor will blow a line, bowever, than any of the deplays will cause a problem The reason Free Ampos (four with 46030 and one a 66026 processer) running the metabole give Conto and Lewis unpresedented control our their conduct a



Amign lets Dive?'s producers lough all the way to the book.

videotope displays, you not up year timing and you're stuck with it," asys Lawin, adding, "Decame wa have a constant field form a vidou tap coming from the dim namers, we can actually see the articeral time our displays is coordinate with what's game on in real time." Cana arcsens "We can interest

Contra agrees. "We can interact with the action and mode the appropriate screens pop up just when they hat the kays, "he says. Not onby is *Disory* Arrings-based sprisser more flexible than the old-fashioned withoutage approach, it's cheoped \$5,000 versus \$60,000

The Amigas let Contiticuas the set the head. The sector of the s

pictures of ocean floors in motion, sonar unages of mismiss and subs floohing status reports, and a readout of the battle's progress 'Write using a tre-

computer graphics right now," says Lewis Ai least 25 of the film's 90 minutes will take place

in full view of the

MEDIUM COOL AMIGA 5050 Combine videodisce, digital sudio, computer graphics, and azimutico with instantaneous information recommutico and at



For me, the computer as a medium for painting fulfills everything I ever wanted in terms of control, creativity, and imegination. It's an arriv! of light: 5

It may not be the Academy America half any you's Second Among ProcPatiant Art Competition has a processing of beight splits and ectoring personalisies. More than 35% contrasts submitted weeks eronied with SuperMan Technology? ProcPass and Prol/Worl Professional. The best-of-the share procwant to Mode Revel by Review Wihiermore and Deven Jarouff Withmanes. "I comband twelve

Withmesser: 'I contact broken poleness as one moary, which I field smaller and that we need comparters to part it all together in one even to part it all together in one even then pit its back done. This asmet thengo its the back done. This asthe together and the back done. This are then pit the back done. This as the start of the back done. This as the start of the back done. This are the start of the back done. This are the start of the back done. This are the start of the the machine because it will help them the the start of the the there is in their week'.

Seven Lyons wen the first-place price for fina or wish Beneral II. Lyons: T wanted to equive the fielding of disease in the integer, the sevent seven and the sevent sevent chare-out directing and then mentulated the integer on-zerose in perensitive the integer of the sevent in a perialibilitie character, beelen down into it up prints of colorment. Humping the compare, it found now inagination. Kuriterout the one into the one is do find-

tion went to second-time winner Ben Cobb for Skydon.

Cobb 'I previou umn waterouors, ole, and nerybe For ne, the composer as a medium for painting failing reversion of control, creativity, and imagination. Bit no avoid of light My work depicts a whimsion! Muor, and that's the thin line as are at walks using a computer."





Make Wiggins was the firstplace winner in the miscellaneous cotegory with Industrial Max. Wantze, 'Two been during four-

We dole digitized images, using compling to remain a croas between oldetrenare cellage and illustration. The computer suits my temperamentit has an electronic malendility. Phis every six menths to so there's a new set of programs that given me wader sources to drive from



Finally, the top prize for graphic design work to Didler Cremieux for his Latter Colour

Considered T. down like specifications reading manual here for a second second

NELS/FIREMAN



CRE/ATIVITY BOOSTING BRAIN POWER

Programs can simulate ecological disasters, teach city planning, and hone math skills

DATELINE January 23, 1982, An

DATELINE March 24, 1988. The Know Vikies spills 240,000 harof Prince William Sound, Alaska, killing 23,000 sesterds, 146 capies, and 990 ottern

DATELINE: September 17-81

DATELINE October 17, 1980.

demonstrate the bases with such environmental

Earth service programs. from both IIIM and Educafarrial Activitiant offer the

types of disasters on humankind fun to play, these drill and betorial

Paradone (649.95) from Electron e Arts, and Bretherburd's SimCovy , two attitude to the art of city man-



agement Should you leave green pollators and the unemployment fig-

NEWS PLASH The Master of Mos-

the offices of the station

Quick! Add two plus

Hidden in the cartsenchildren in a rounicas and

my, in the \$49.96 second to Saper



oppearing sade to not how they deal



1400-355-ARS./ Powered Partners. Superior Sound Simplified.

ANNISA RESCURCE

trieval, and what have you get? Maltimedia Unfortunately, machines able ga 3300 has the horsepower and the potential to do for Amagn what deektop publishing did for Magintoah.

The Arroza 3009 bas both a techits competitors. If the market contanues to grey. Commedore could find itsolf with a regressanding lead in this new field That's good news for the Controdore machine because the Arreon has firmhed last ofter PCs and nance in the small concenter errors. Its higgest weekland money fewer software. applications such as databases, spread-

With the introjection of the 2000. however, Amiga has a machine that cam fill a unaque noche. It boasts camahilties to handle color and video that effortlessly rival those of \$10,000 Macintoshes and PCs

The Arrista 2000 is based on Motoras that of the hath-end Mari, runness at a blazing clock sneed of 25MHz

(10MHs on the loss expensive model). It has a built or DRARI or ARRAS rooth coprocessor, s full 32-bit data bus, etther a 40MB or 100MB hard disk, and more than a gigabyte of address spece Beyond these features, haverer, the 2009 is a multimedia wonder sound coprocussors. These modes up porof today's microcomputers

The custom chup set enables the Amira 3300 to airredtanezzaly arterate graphics, display test, play digitized from a disk, without slowing down the comprotes's main microprocessor. Othof 4.005 colors, high-detail screen resolutione, digital four-channel storestaffio, an posy to commerchand graph. is user interface, and the ability to run serveral programs of the same time. For example, you can doplay a video image from a VCR in one window of the scroon, work on an illustration. using a greater arts nockage in another, run a spreadsheet to balance your books in a third, write a letter on a ola's \$8010 microprocessor (the same ' manie with a composing package in a fifth-if you've got erough hards

-Randy Thampson

COMPLITE'S PC

You can restall the software on a hard disk or flopery and run it either as a stand-sizes program or as a mem-

TO FIND HELP ON A DOS TOPIC.

1 Time MELD of command hime

2. The program's table screen appenrs, followed by a table of contents.

3. Seloct your desired subject from the mean, and several screens of to-

4 Finding this information i Hela's real power yet. When you're looking at the first screen of DOS command xcory, for example, yco'll see the phrase THIS IS AN EXTERNAL COM-

5. Move the cursar to this alwass and press ENTER. What appears on the screen is an explanation of external commands --- Clifton Karnes

from the following measures Ad Lib Music Card

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CRIME BYTES

grammed to maintain control of the arcraft unity it is completely out of perif

"X looks to me as though someone computer telling your people?

I asked them to have the Pacific Ren people patter up the flight mendest and kensbeld office. And don't let anyone found the boarding periods," (seed '1

So where d you get your computer training? "Titlany asked me on the way back to makeraleid WT?

In my backnam " / kold her. "When corrowers Tillery hadrit been around didn't lluck it measurary to time! har on

'One day in '39 J/wasd about a new about twenty mousand other Aide made a nun al it i was one of only a

a strig Your Nends in the FBI simped to prison or work for us . Needbess to

'Not noht away The Defense Departdetense systeme Ticubit is the wius year no good we couldn't make our own communes annuas to if Khan some hacker got abold of it we had to kill a out completely

The Great Crack of 987 Way work

I designed the worst that found as creation them all it's the only way we

est threat to computer security is federates working on the made of corclaring acts of technological legerdemain are the forerunners of future

take "Granted, nanety-eight percent of curity manager who also opcitients the Federal Computer Investigations Commiline. "But what about the other hap preak into covernment and military comruler exceptions what will these kats be Lke in san years when they move into positions of responsibility

arcane code of honor and look upon bernarias Michael Synergy once machevously pulled Ponald Readen's credquests for the former president a credit

6Thara's little that can be safely hiddan from prying eyes. Nearly every unclassified data network has been penetraled. Evan a classified network aan be susceptible 9

Syntropy biso recalls roaming through THW files and hotcing a quee tonable collection of some 700 people was puzzling, Synergy thought that a credit card company would assue only ant who legally changed his last ple were very likely in the focieral will-

Even though he risked being proce outed for elegal treepersons. Synergy which quickly moved to protect the cardholders identities "Otherwise sheer luck that I got there first. The names could have just as easily beam course, was an accepted part of the ever, through ave changed, and it's not easy to enforce a code of ethics when Systems in Berkeley, Galifornia

save Marc Rotenberg director of Com stelly's Westington, DC, office, And people could be swept up in the gov

knowledge' could fell into the wrong Graper, for example, hed concocted a device that could be establed to a telephone, allowing hern to slegally connect calls and avoid tolls. Nicknamed Capposidn't be mored

to use digital data formats to encode sag

Drug cartels in fact have become so technologically smoot that in 1987 kam Londono eluded prosecution beputer instructed his captors to release confidential information from a Depart. al Arport, the data were obtained by an Computers could be weapons in an array of comes. In 1980, for example, an at inflex controller opposed to his Soviet inseason of Algamstan astempogramming its location from one computer somen to aschere in the control lower all here York's Kennedy Arport A "shop shop" in Photers used an electronic buildin board to sel and take ordere for telesion car parts

"Computer criminals are usually wollgroomed, intelligent, and articulate They don't the public's perception of a crook, 'says David Goneson, a lormer assistant U.S. atomey who proseosed Jonathan Poland, a Nixy analysi who was connected of spying for the lareal government.

Ever so computer crime damographlos reflect those of the crime work an germel Acostralgi o a 1988 survey by the National Center for Computer Crime Data (NCCCD), almost one find of toose arreated in California for computer crimes are women and nearly had are members of materity racial or ethnic groups.

"Our bemplog notuced haldhal ommis, party office withsubmit, with data employees, and bank when who had employees, and bank when with our enclosed bank and authors of bank enclosed banks and authors of bank and and any and any and any any any party systems palay the granados to omparty systems palay the granados to omparty systems palay the granados to omban of people who gran access to center al comparts and in a the technology bactome assain to case bank of banks to adde with them streamed.

BLACKSEARD'S BOSEY. It was soon clear that no one was operating the selable remotely. It had to be a program released who the constants

That is reposable, the Frid progenetrol on the first Merce Merce Toron Carl and the Merce Merce Toron Carl Lange — and Carl as social and environments. The on the American and the merce and ever the on the Americandes on the patients balow II is detects anything other than selectionary to any dama to another the interface of the selection and another the product applications and another social to complete would remark the product to complete would remark the product to produce the intervated data.

Countrary handled me a mile taking mail the FAA's appress package had arread from Pathrolate. At the bottom of the note and the pMR Then at ha me mother and the DMR Then at ha me

"Solar weahout," I Jold the programmer "For a couple of excends twips a year your laser receiver is prucisely eligned with the sun so that the sun tempowerly bleck at. The same living happers to TV satabilit darbes."

There was no need to program for a OWN that eventuality," he said. "Everyone knows the computer link wouldn't be downlong enough for any planes to collide. We have more than enough time to pick up the communication."

"Maybe so, "I and "But that just anough time for an arphine's temporader to and a worm value the satellite. The satellite would by to relay it to the ground but in a solar would be the ground would never neurone it and would never relax in a concernation commend So the ream a concellator commend So the ream solar before the bit to work market the satellith computer."

The people at NASA helped me to compute when a solar wandwick within New Monzo see would nave occurred to use a wave and any of endoty if it at put commend time. I manpatient of the planes within an at this moment and it planes within an at his moment measure from ecomputers to all me measure from Packde Tem Tegat 875

Every week more than a trillion dollars is moved electrancally around the world, and more of these transmissions are being intercepted than banks are willing to admit 9

from Spokane to Des Mones. Someone had manpulated the place it temptorder to send up the worm at exactly 2 td 34 init. Mountain time

"Titling track down that arcself and have your lab people search the transporter for any georetic material Cournay. I level you, "I showed "Salas those boarding passes to the lab for fingergarites and georetic typing. Meybe an our's on that reline meth now."

Another message came in from the hyperbar, and I told Tillarry to issue them send me the actual raw data as then movimed them.

A hell hour lear contrary gave me an update on the boarding passes. The kib people any all be prostics lists check out except one pay cent match with anyone. They want to know if this should do a national losse on it."

"Hall yes," / sad "Who knows, he could be our pury?"

When Washington was ready to ship the raw message I fed it straight into a program that would look for cluse as to how the message was inlootuced into the FBI computer II lootuced into the FBI computer II didn't always work, but it was work's a shot When the program apit out the answert, I couldn I believe what I saw "This can't be right Whoever sent this phoned in with vierbal commands That means he last veccommts."

"You re right," 7/Many said, as surpread as 1 was: "18 have our people back down the analog voice recording and hace the prints.

I continued to nemotely probe F47-CAT's operating system: hoping I out/d hocite the actual worm and break the code. I was beginning to think the plane world run out of fivel befere I code that the nemo

Nou won't be needy for this, Castos ' Thory and when the FBI computer center reporting a mitich on the society of Hamphory Bogart But hers been dead socie than May years'

"Our guy has obviously preced togeth er oid avralog assund recordings to give the computer real voice commands," I told her. He knowe we'd be able to dently hen if he used his own vocci."

"Why didn't he do it live old-tashtored way-with a keyboard?"

Planmentier the computer single to body you i got caught as in when I was a soft Weil, the government a compute a soft Weil, the government a computer register patients of Accurates of head register patients of Accurates of head period cests or actually add to indexidy period cests or actually add at which they appear cests and compare works they appear oracle on tasks many head to be appeared actual or mails have Blackbeard exists of anyone.

Vikacationed?' also asked

Tests this only one who got with the generiting system and investri inablered by the FBL And I in did E by recording other inscisor' insystember. Then the apparently put freem all in a chandware bild could pair up evolve free wanted to bare on the inspisored—but they would be rearded with or other inactives fund typed i he went to a not of houble to known from greating caught."

Looks to me like whoever a controling 901 went to the same touble. Del A ever occur to you this could also be Realthourd?"

What bothered me most was not hist whe figured it out but hist also figured it out before 1 did. "Of course it coucurred to me. Why do you think 1 brought it up in the krat place?"

ELICITERNIC HIJACKS Computer velia multi busce can male electronic wills multi with the stroke of a hey. "Any system the this table, capability (histophare access via moder) can be veliated by a manut, declared hascies". Miligan anya Tharita life that can be selecy had on from pying upos. Just allocat or velicity is had been penetrated at across NISAN had been penetrated at across could be susceptible to investors. If though government computer security efficials point our that most of the mensy for computer security is summitted for the government is calculated insteodes under the jurisdiction of the National Seounty Agency.

On this fig 1088, an many to as conspectros todo endy the mattern but has the first harmonic thanks of charge of 3687. In the harmonic the shares to the the structure of the shares of the shares of the structure warmonic technic harmonic technic warmonic technic harmonic technic harmonic technic harmonic technic technic harmonic technic harmonic technic harmonic technic technic harmonic technic harmonic technic harmonic technic technic technic harmonic technic harmonic technic technic

This may scandalous now Hile regdesay connote there are, but socially always takes a backheat to Utifyary Lence Hoffman, a polesaur in the department of scattral graphering and computer scance at Scotge Weshmatrix University in Weshington, DC "Any kid can go out and, for less than a thousand doiling: buy the electronic equivalent of a Beautify right speculi with the night compare to aparent. The can hook up to international networks and do a lot of clemene "

The population or refer desupportetion framework with all fails cost of the patient of the second second second second second patients and the second second second second second all Research System, which controls the second second second second second second second all Research System, which controls the second ment work i spatial few more to shread the research second few more to shread the research second few more to shread ment work i spatial few more to shread the research second second

Notes that 31 littler is more deputy interview of them is more deputy interview of them is more deputy interview of them is more and the other and the second of the second of the many course of norms for the Pelagraphic Littlerature Organization. And in 1970 course, to local Becarry Actionstration encloyee, who have a course of the interview of the second of the second and the many course of the second and the second second and the Pelagraphic littlerature of the second and the second second second and the second second s



someone spotted the scheme

It's here's a quartify exactly here math marks is being herefold on the alternational data highway. Domestpeak on the second second because compares want to evold ad publicty. "Other accountions ig tark the load data to gard of the price of deer gaves of these incomestions in dearth and diverse, housed in a discrete struct diverse, housed in a discrete struct diverse, board and a discrete struct diverse, board and a discrete struct diverse, board and a discrete struct with restores second prices."

And applies two-investment applician of opposition properties in the odd of heading committies on a tradiodd of heading committies on a tradiodd of heading committies of the traditional application of the committies consider part function of the committies consider and the committies of the advances in comparties footneeds, in fail, the number of the committies of the construction for example, the construction of the committies of the committies of the committies of the committies of the committee of the committies of the committies of the committies of the construction of the committee of the construction of the committies of the committies of the construction of the committee of the construction of the committies of the construction of the committee of the committee of the construction of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the committee of the construction of the committee of the comm

According to Paul Ballou a researcent fallow at the Instatuto for the Future in Menia Pask, California, "Werrestly worth these stypicans until we got a burch of the state systems until we got a burch of the state sudar of the envelope work of the excellence of an Unit State work fittin the excellence of an Unit State actives then occes the crocks, and hnally the costs".

THE BEARDED LADY. "Command Date equals March twenty-revors year equals learny alwain 4.0 Execute command." I ordered the PATGAT computer Marky own Moments later FAA headquarters reported the crew had regioned control of 901 and verse now landing at Denver. Now work "Tittany told me. "But what did you do?"

"Block in '98 Blanchbeard shipped through our lingues by otherging the galar in tas computer a management plained. The vises we sent to all the computer had a rims law. As far all his computer has a constant of the sonan name activated that Accusing the roogsam Blochbeard sent PATCAP was designed to energies duel lacking only leg sat made today of away."

Brillant So you must know Blackbaard's identity Who is he?

I always hated questions that lacked good answers—especially when they were directed at ma 'If I know that, he d be in pall right new '

I was released when her transposer sounded before she could crucify my opo. 'Great news Pacific Rim Antree asseed in on the plane whole lowapsode senti up the work last work. And our left people found a her made the transporter casing.'

Within moments they had fed the warnup to my computer, which I armediately primted cue. Takiny and I then went to see Kowin Momes the best genotes perron in the Below lobit of terry and he fed the data below lobit of terry and he computer, and we welched as it approxipoler, and we welched as it approxipoler, and we welched

"Ye not what you were expecting," Kever said, "but it a measuring. The person on the limit chart has to be the offspring of the ascond."

"Do you have arrough data for a national identification check?"

It would only work if the two people nad previously had ther data placed on fee. There were still a lot of people who wase not genetic-typed at both and had never been arrested or applied for sensive sole. But it was worth a hot.

We walked back to my office to easi for the results About 20 moving later. Keen welked in and about the door behind hor. He tabled in a whapper 'U could's that a record on one of the obarts that the other one comes back to . Counter, Kaw.'

"She probably got har tegeoperar or one of the boarding passes whan she opened the peokage from Palmdale " Tifliany said

"That's obvious, "I said "But the genetic code says she is the daughter of whoever tampened with the activer's transponder Blackbeard's daughter'' I called Countey in and anleved her

I called Country in and asked for to sit down "Country when old you last here from your father?" On my Meanth bathday, "ahe and

On my Meerith bithday, "she said "He sent me a card and his pickup Why? Is corretting wrong?"

Nor sure You have the photo?"

78 get it ' she said She walked to

the outside office and trought backs a small halographic singulate of a formithyboling blac-color type with a dark, well-getomed backet. The amonghem on the back reads "For threade years he seerched for you in all the get points and the stader was in all the you'd Galad 1 found you. Here's houring at you, kirl Love. Bart "

i canability handled the hologram to Kown. "Nou know what we're looking for Let's hope there is still enough to get a ganetic typing."

"Something doesn Ladd up, Carlos " Tritary and Turning to Country, "Is your dad a Humphrey Bogart fan?"

"Titleny," I said excessively, 'how would she inver that if she hash's search are since she was a body? Her mothare coming by in a few menutes to mait her kn knich. Why don't you wait and ask her?"

My guesse is her mother's not coming for lunch. Carlos Right, Countrey?

Git's hard to quantify exactly how much money is being hijacked on the international data highways In this country less than 50 percent of such crimes are over reported.

Yeah, she just celled a couple of min utes app. Hoy/d you know/?

Sounded like a good queebon to me "Might, how'd you know?

"Carlos, pou may be a computer genus, but you save don't know people. If Courtery's Sthere were really Blackbased, it wouldn't have taken her bit her filteand bothday to had her. Courtery, are went en. "your mother collecto dof fasthomed videotapes, doesn't she?"

"And how'd you come to work for Cer-

My mother heard about the opening and abe

"And what does she do for a living?" "She works for some large European carparation that initials equipment or arclanes."

What knd? Transconders?"

Keven suddenly burst into the office with the test results and confirmed what Tiffany had already figured out

"COP AD The police are the first to admit that amart criminals are guite agile and will always be at least one jump sheed of the law-enforcement agents Even so a synthetic relationship exists between the two groups of loss. "The copy and the robusts depend on each other." Saft observe. "The robbars keep the copy in business, and the copy keep the robbars on their bear Technology has allowed all of them to the down and

Enclosely polaring an incrimingly diverse and bothorogically applications of access parameters and chall angle to loadmany applies and chall angle to loadmany applies the community, the coperations from the community, the coperations from the community, the coperations of the community of the angle is that the polarism and the the angle is that the polarism and the angle of the community of the angle of the the the angle of the the states of the angle of the from the angle with the the the the manuface protects and serves, which and he has a the both the states of the and the states of the angle the a

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EPLOBUE it reason leasy when power the modeery about when was in other the interneter it was even hasdes taking har when a could now preced tayoffer about her methema paint Gennative main hast a hasher a secret even from her hastand and her disaptive. This has a second Country when hard come closed to nabling Blackbeard in the sets!

Can we do this after functi?' Tiflany akked when we saf down to start enterna our reports.

"Why not," I said "How "bout I buy?" I grabbed my overcost and my remponder holster and told my office door to gom

"Carlos" she said in a mullied voice. "I think the is the beginning of a beautiful frienderup."

It was worth a shot DO





o Tinas Créers Accepted

INTERVIEW

CONTRACTO FROM PROCESS

by humans is producing methane at a rate of fonty liters per day for every person in the world

One was precise, anoward of a second office the precise of the second se

Greas What are the latest things you've been working on?

Griegt Several things that are rather note One is that the premordial next so-

CREDITS



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itar ocean section in the North Pacific

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But second, and more important, is

the polar cet caps We've now seen that the rare gas keyption can be enriched up to two percent in mow guil above the cell leyer at the Roussan Voetice tes in Antacotice tes in Antatice tes in An

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and behold. There is a precessly smilar plane in the North Peollic internoing weetward across the Peollic, northof the opalatic So there are note tugge tool of deep writer flowing weetward across the Ranha, part north and south the opalatic Thes is a finding virtually improved by most operangements to Deskey. Why do so many expended to-

Other. Why do so many scientists ig nore new discoveries?

Credy Think the problem of "recogntion of new findings is due to two eflocts. One specific to coreanography, is that most of the so-called physical oceanographics dont go to see . So the understanding of the discussion. So the understanding of the discussion "that is the workship" backways. The report is the workship" backways. mous dozen their new huter in esance are ostatilished not by conwond and ostatiantes by conwonds but by welling for them to see an that a general bon con grow up instatisated by the instatisated

Devisi. Did a bothor you when a colleague suggested you settle down and become a the oroticals?

Craig: No In a way it's a complement But to ma the appeal of soence is participating in the advanture, taking the

samples and dong terreting pand when kis and lived in a body can lake when kis and lived in a body can lake summarized and lived in a body can lake summarized by the lived on a body down addy and sign of the lived of down addy and sign of the lived down addy and sign of the lived down addy and sign of the set of the lived and the set of the lived and the lived down add of a set off when the set of the lived down the lived down

GAMES

CELEBRITY MATCHES

Can you pair up these famous folks with their patents?

mattern and presented a cuiz of the topic (Answers appear on page 1091 This month we salute the first U.S. patent and the inge-

Edison He received a total of 1.000 peterts dus positiumous-



tao Waxoo Elencity, Wiso was We varians, a popular orchestra Like-

in the first list at at moht with the than one patent Ematen and Or ad fields. The answers appear in the third column of this page. If knowledge of piktents is about average, ten is good,

THE CELEBRITIES

- 2 Albert Einstein 3 Bete Nasmits (mother of Ma-

- 7 Alorahem Linock
- 8 Herbert Zoppo Mary
- 10 Lillian Passel
- 11 Edle Adams

- 16 Paul Winchell (ventrelocuted)

B Liquid Paper typewriter opt-

Two design patents on

F. Brig shaped oparetie and capar holders

soap bubbles

H inflatable creambors for kit-

1 A societ communications was

K. A party ricepartaiser or "biowtions when a person blows into

L A self-pasting screpbook with achesive pages

thes through the air, does a some

N. A game to help players re-

a dresser, with drawers pull-out atreal supplies

1-G Dos Pasaos is letted as ocin a 1969 patent

2-R In 1930 Einstein was a co-

Pypawriter opyroction flaid and called it Louid Paper The Griefer Corporation bought her company Nesroth dod in 1980 she left

ent for a dwar's suit (no

reservelyat, no D 166 807, was

6-1 Lamax, famous for movies such as Fostasy (1930) and Alreceived patent no 2,292,387 with composior George Arithe4 in 1941. The inventors is classified intern theody and arrutineeusly tween transmitter and receiver to

7-H In 1849 Lmooin, fren an Mana device himself No. 6 482 is

B-A Zeppo Marx patented his beat alarm in 1959

9-0 Actroso-dancer Newmars palent [3,914,7990 ' chasks demens" party hose in 1975.

10.0 Bussell the Gay Newchesses-brunk in 1912. Her palorit

15-F. Adams was lated on her



1950 passne as Euth A. Kovaco. 12-Di L. and N. Tessn, as Barnuel Clemens rocewald three petnets. The test in 18/11 (no. 121,902) was for an actualizability detachable book strap for vests. The asrpbook was patented in 18/75, the history game in 1885. 13-C. Weik dosegned textal-C. Weik dosegned textal-C.

lanch bases in 1950 and 1951

te-child all in trade varifies qualit float Winchell mode a childre imaak (no. 3.1282001) GF genator significantio, however, was his potenti of a blacke hoet yang in 1982, hiered at the University of Late Disorder of Missie of Ski dage abar de oar heaet had bleen removed. Winchell a de sign, is correctived for the blat human attracted heads, lead to Baberi Janeke model

15-M. Orvite Wright resegned the 1505 patent for a flying dell to the Mami Wood Specially Company of Dayton.

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LAST MONTH'S ANSWERS PER-PETLW, MOTION

Here are the answers to July's pasz on perpetual motion

1 OPERADUATED WHELD TO DEVELOP WHELD TO BERNER, HAVE SUBJECT TO whether off postoor so that they are far from the context of the whether the characteristic, and doorsers of the context of the whether the characteristic of the wind off postoor the context of the whether the characteristic of the whether the context of the whether the context of the postoor whether context of the postoor whether the context of the postoor whether the context of the In There is no way to design a wheel so that the sum of the moments on back is always greater than the sum on the other side. Drawings may look persuasive if they show how wheel at the initianit when it is temporary overtaliand on its temporary overtalianced but the sheat leads for only out of a needalion.

2 WATERWHEIL Is possible for the waterwheel described to rate some of the water back to the top (by way of an Archimedge scrwy) but not enough to rotal the wheel with sufficient weight to back the actes again.

3 MARC MARCE II the megnetic strength on strength o

A HIAN FLAP. The Bitward intermeters at the according to the second second second second second second second second second of second second second second second of second second

5 PERPETUAL CLOCK James Cox's mechine may be consulered as providing free energy. for human use. Because it relies on an outside source of every (the sur) it entrolessified as a pepetual motion machine.

B DUNKING DUCK The is another case in which the machine works without fuel provided by people, built does rely on an outsole power supply-marriely, the cooling effects of evaporation

2 Schuldzwaldz bewonitrengene desentierd last menth modelse besident en sone med from an outside source namely the doctage power is do the "behaviour and the source namely the doctage last do the "behaviour and a subted becapion" behaviour of the moving weight will describe the "behaviour" and the source fait the behaviour down down at he be behaviour down down and the behaviour and the source and the source and the source and the source and the and the source and the source and the source and the and the source and the source and the source and the and the source and the source and the source and the and the source and the source and the source and the and the source and the source and the source and the and the source and the source and the source and the source and the and the source and the source and the source and the source and the and the source and the source and the source and the source and the and the source and the source and the source and the source and the and the source and the source and the source and the source and the and the source and the source and the source and the source and the and the source and the source and the sourc Scene calebolius have consided mone than pure names have thremeeives. Page 108, top to bottom: Ealte Adarms, Hedy Lamar, Littan Russeth-Tois page: Past Witched witched witched witched altery Babceny.

STARTECH

ACCESSING THE FUTURE

FRANK TALK

The Hel Diggity Dogger (below) hrells two her dege and teasts two hera la threat to five minutes. Pan at holtess allows for any deanleg. Cast 560.00. Context, Welhilt, New Hyde Park, NY, (116) 365-3060.

IME TRAVELER

The ke adlight shaped Cruiser (below) sheets a mean glow, Cesh 640. Centect: Cleans USA, Maw York, NY, (212) 941-6767.

TOTAL RECALL

They'll have to phone you back theoles to Cell Guerd (abeva). Davice restricts outgoing cells. Costs 529.40. Costset: OSA Systems, Inc., Joliot, IL (600) 925-6671.

LIGHT LISTENING

The T-SOO (right) lots yes see the musicand the internal worklarge at like internaparent AM-7M realis. Frankress Besting LAD lights. Centi 53P.45. Castucti: Gaulinex: of Ascelen, Asabola, CA; (714) 955-2509,



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BUSINESS

Recent up to 15 seconds with the Chatterflee (helew), Feathers a five-fauction wetch. Alen aveilable: anwal offects, FM redin, and vales changer. Cast: 539, 93, Cestert: Cherlerflex, Saste Clave, Cd, (408) 985-2054.



TV OR NOT TV

Weish TV on the TurketExpens (abavo) or play video games. Cash: \$240. Castach NEC Technologies, inc., Weod Date, BJ: (708) \$40–9500.



I AST nuceo

By Boberto Sentiago

6Ah, that's not the power of myth," my friend Kwame says. "That is the power of guilt. The power of quilt is what made Einstein ao mto physics instead of into dentistry! 9

Trust can't get encuch of Joseph Kwarrie, my longtime Alnoan triend He PBS sense. No doubt he d like to

my rearing," he says. Was it true for

it sure was," I say, swabbing a roll

correct this lack of respect-and in-

ham a gonor, he was taken to the

boy's parents didn't know what to do. school suit and saved a hole through

remand me of Lenny Bruce's old toke 1 had a leichtonal New York upbringged my name wasn't Shut Up

much "he says to me. That is the power

cryin, Tsay. The power of guilt is what inspired Alexander the Great to conimperius to govern?

"That made Jeaus give up carpentry

"That made Ensign go into physics and not into dentistry

a special on the power of guil?"

"You know he should," he says "But mothers' chiding stones-not ancient

cillions of worry opgs that I had just

"What about the sheet feet ander!

"awwar. I wound up even esting the beets of my estar a plate. Kwame continues. How about seying bed words? Did you have floating letters?"

Walled Nevera ever touch it? Nee!

when you want them

"I never heard that one," he says

much with factory." CO