Oct. 21st

Martin Gardner

Born: Oct. 21, 1914;

Tulsa, Oklahoma
Died: May 22, 2010

Gardner was renowned for his writings on recreational mathematics, principally through his “Mathematical Games” columns which appeared for twenty-five years in *Scientific American* [Aug 28].

The column began with an excellent piece on hexaflexagons in the Dec. 1956 issue. Over the years, Gardner also introduced numerous computing topics to a wider audience, including John Conway’s [Dec 26] Game of Life (in the Oct. 1970 issue), fractals [Nov 20] and the Koch curve (Dec. 1976), public-key cryptography ([Aug 00] 1977), and Douglas Hofstadter’s [Feb 15] quintessential AI text, “Gödel, Escher, Bach” (July 1979).

Martin Gardner. Photo by Konrad Jacobs, Erlangen. CC BY-SA 2.0 de.

Virtually all the columns have been collected in book form (which you should buy), and no lesser a luminary than Donald Knuth [Jan 10] has called them "canonical". Noam Chomsky [Dec 7] also wrote, “Martin Gardner’s contribution to contemporary intellectual culture is unique-in its range, its insight, and understanding of hard questions that matter.”

Gardner was also noted for his debunking of pseudoscience, his skill at magic tricks (*MAGIC* magazine named him as one of the “100 Most Influential Magicians of the Twentieth Century”), producing annotated versions of Lewis Carroll’s Alice books [Dec 10], and his love of "The Wizard of Oz" [July 30].

“Gathering 4 Gardner” is an educational foundation devoted to preserving his legacy.

Wang’s Core Memory

Oct. 21, 1949

An Wang [Feb 7] filed a patent called “Pulse transfer controlling devices" which was eventually awarded as US 2708722 on May 17, 1955. It described a mechanism for using the magnetic field of ferrite cores to control the switching of current in other parts of the system. In addition, a write-after-read cycle ensured that the stored data in the cores wasn’t lost in the process. Wang also published his results in a 1950 article coauthored with Way-Dong Woo, another Shanghai native who worked at Harvard.

Core memory went on to become the predominant form of random-access memory for the next twenty years. until the mid 1970's.

Several other researchers in the late 1940's had suggested the idea of using magnetic cores in this way, and Jay Forrester received the principal patent, even though he filed it on [May 11] 1951, after Wang. In April 2011, Forrester recalled, “the Wang use of cores did not have any influence on my development of random-access memory. The Wang memory was expensive and complicated, as I recall.”

Wang sold his patent to IBM for $500,000 on March 4, 1956, and used the funds to build up Wang Labs. IBM also bought Jay Forester’s patent from MIT for $13 million

IBM 1620

Oct. 21, 1959

IBM announced the IBM 1620, a small, inexpensive, transistorized scientific computer that could perform around 100,000 calculations a minute. The speed was achieved by performing most of the arithmetic via table lookups stored in core memory [previous entry] rather then through logic circuitry. The machine’s codename was CADET, which supposedly stood for “Can’t Add, Doesn’t Even Try”, referring to this use of tables.

An unforeseen side effect of this approach was that some hackers later discovered a way to extend the 1620’s instruction set by storing different numbers in the tables.

Although the 1620 proved to be very popular (almost 2,000 were sold), Edsger Dijkstra [May 11] wrote a devastating review (document no. EWD37) in Jan. 1963 pointing out several flaws in its design. Production of the machine was not-so promptly discontinued on Nov. 19, 1970.

It's successor was the IBM 1130 [Feb 11].

Sinking of the Eilat

Oct. 21, 1967

The INS Eilat (originally called the HMS Zealous) was the first ship sunk by a “smart” weapon. It was on routine patrol off the Sinai coast when two Egyptian Komar class missile boats opened fire, and three P-15 Termit radar-based homing missiles hit the vessel, causing catastrophic damage.

The P-15’s guidance system contained both radio-wave transmitters and receivers and an inertial navigation system, allowing the missile to home-in autonomously.

This incident sparked a global arms race between anti-ship missiles and defenses against them.

The Eilat was bought by the Israeli navy in 1955, and had featured in the movie “Exodus” (1959) starring Paul Newman.

Viatron System 21

Oct. 21, 1968

Viatron Computer Systems was founded in 1967 by ex-engineers from Mitre Corporation [July 21], led by Edward M. Bennett and Joseph Spiegel.

On this day, the company announced its System 21 terminal, consisting of either a 2101 or 2111 microprocessor, a 9-inch CRT display formatted to produce four lines of 20 characters in color, a keyboard, and two cartridge tape drives. An optional attachment allowed users to connect the terminal to a TV. The intention was to lease the system to customers at a very cheap starting price of $40 per month.

Other options included an optical character recognition device, a “communications adapter,” and an ingenious “printing robot” which interacted with a standard IBM Selectric typewriter [July 31].

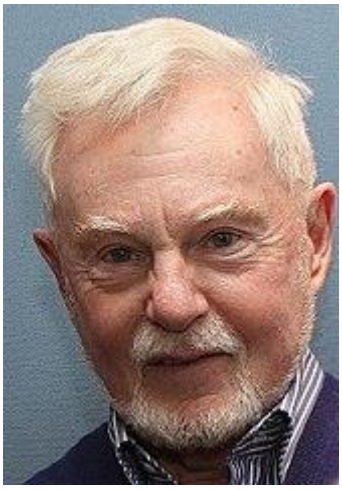
The system specifications were amazingly advanced for 1968, and caused a lot of excitement; one nickname for the device was the “Everything” box.

Viatron was predicted to be the Xerox or IBM for the next decade, but the company was unable to build the planned 5,000-6,000 systems per month to stay within their cost projections, and never achieved profitability. Bennet and Spiegel were fired in 1970, and the company declared bankruptcy in 1971.

Breaking the Code Premieres

Oct. 21, 1986

The play, "Breaking the Code," by Hugh Whitemore thematically linked Alan Turing’s [June 23] cryptographic activities with his homosexuality. Sir Derek Jacobi played the part of Turing, and the role had actually been written with him in mind.



Derek Jacobi (2013). Photo by Kontrola. CC BY-SA 3.0.

Following an eight-month run at the Theatre Royal, Haymarket in London’s West End, the play ran on Broadway from Nov. 15, 1987, to April 10, 1988. It was also adapted into a 1996 TV film directed by Herbert Wise.

The play was based on the biography, “Alan Turing: the Enigma," by Andrew Hodges, which had been critically acclaimed when it was published in 1983, with Donald Michie [Nov 11] calling it “marvelous and faithful”. The book was also later the source for the (somewhat less faithful) 2014 film "The Imitation Game" [Nov 28].

ECPA

Oct. 21, 1986

The Electronic Communications Privacy Act (ECPA) was signed by Ronald Reagan. It meant that investigators only needed a subpoena, not a warrant approved by a judge, to get at a person’s e-mails or other electronic messages, as long as they were more than six months old. Civil liberties advocates argued that the law’s language gave the FBI too much power.

Although the emphasis of the act was on e-mails, it soon grew to include the BBS community, and today’s social media.

OS/2 2.0 Announced

Oct. 21, 1991

OS/2 2.0, the successor to OS/2 [Dec 4], had a new 32-bit API, an object-oriented user interface called the Workplace Shell (WPS), and an impressively large selection of games.

Early in 1991, Steve Ballmer [March 24] had said he would eat a floppy disk if IBM shipped it before that fall's COMDEX. Fortunately perhaps, IBM missed that deadline, but only just: they released a limited edition, OS/2 2.0 LA, in November. The full OS shipped in April 1992, a few weeks after the debut of Windows 3.1 [April 6].

The minimum hardware requirement displayed on the box (and a heavy box it was too, holding 21 disks), was 4 MB of RAM, but users soon discovered that the useable minimum was nearer 8 MB.

IBM promoted OS/2 2.0 as “a better DOS than DOS and a better Windows than Windows”. This meant that it could easily run Windows applications, but the effect was that many developers decided to write programs only for Windows, foregoing OS/2.

The OS'es development had begun after IBM and Microsoft signed a “Joint Development Agreement” in Aug. 1985, but the collaboration had begun to unravel by 1990. The two companies parted ways in June 1992, and OS/2 became IBM's exclusive property.

OS/2 3.0 (aka Warp) was announced on [Oct 11] 1994.

The PowerBook
Oct. 21, 1991

At the COMDEX expo [Dec 3] in Las Vegas, Apple introduced its first PowerBook notebooks: the 100, 140, and 170, which had been designed and manufactured by Sony in collaboration with the Apple Industrial Design Group.

They were the first laptop to have a trackball positioned in front of the keyboard, but most of the internals were based on their predecessor, the Macintosh Portable [Sept 20].

The line went on to generate over $1 billion in revenue for Apple in its first year, and capture 40% of all laptop sales.

The PowerBook was eventually replaced by the MacBook Pro on [Jan 10] 2006 as part of Apple's transition to Intel processors.

Explicit White House
Oct. 21 (or 13 ??), 1994

whitehouse.gov, the official website of the US President's White House, went online. whitehouse.com came along just three years later (debuting on May 21, 1997), to offer a choice selection of adult and political entertainment. It suddenly became very easy for users wishing to visit the President to encounter a rather explicit adult website instead.

"Whitehouse" misdirection was frequently cited as one of the most egregious examples of domain name misuse, and was a major reason for the passing of the Anti-cybersquatting Consumer Protection Act of Nov 1999.

The Gang of Four
Oct. 21, 1994

The use of design patterns in computer science shot up after the book "Design Patterns: Elements of Reusable Object-Oriented Software" was published on this day by the "Gang of Four" ("GoF"): Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides. It describes 23 software design patterns, and includes examples written in C++ and Smalltalk.

The book began as a Birds of a Feather (BoF) session at OOPSLA '90, where Gamma and Helm met. However, design patterns first attracted attention when Kent Beck [March 31] and Ward Cunningham [May 26] presented their results of applying patterns to programming at OOPSLA '87. Of course, the notion dates back further, originating as an architectural concept in the 1970's, proposed by Christopher Alexander.

A recurring criticism of the "GoF" book has been that its patterns are mostly workarounds for missing features of C++. For example, Peter Norvig [Dec 14] demonstrated that 16 of the patterns could be simplified or eliminated by coding in Lisp [April 15].

ASIMO
Oct. 21, 2000

Honda introduced the ASIMO (Advanced Step in Innovative Mobility) humanoid robot. It was 130 cm (4 ft. 3 in) tall, a height chosen to make it easier for it to reach door knobs and light switches. It was the successor to Honda's P-series [Dec 26] robots.

The ASIMO could walk at a top speed of one mph, climb stairs, and could recognize faces, gestures, and the movement of objects. It also understood around 100 voice commands. In 2004, it was inducted into Carnegie Mellon's Robot Hall of Fame.

ASIMO. Photo by machu. CC BY 2.0.

ASIMO was the inspiration behind 2012's film "Robot & Frank", where a robot (not an ASIMO) assists an old thief commit his last cat burglary. The robot was actually a woman in costume (most of the time), but there is a brief appearance by an ASIMO.

For more humanoid robots, see [March 16], [Sept 5], [Dec 20].