

Anniversaries of Science

May 13, 1897—Marconi's telegraph was given a long-distance trial without reflectors or resonance plates across Bristol Channel, England. The apparatus at first did not work, but lengthening the antennae saved it.

Marconi had improved on Hertz's original sender so considerably that when he demonstrated his invention before the British postoffice officials in 1897 on Salisbury Plain, he transmitted signals four miles. And yet there was not a single original element in his apparatus. This is not said to his discredit. Morse's telegraph, indeed every epoch-making invention, is usually a new combination of old elements, producing a new result. That Marconi is a great inventor, that he has the imagination that always makes great inventors, is proved by the mere fact that, for all their great attainments, Hertz, Branly, Lodge, and Popoff never dreamed of signaling through space, although they were experimenting with the electromagnetic waves almost daily for long periods.

Marconi discovered that his range could be increased if he elevated the wire constituting part of the sending circuit and connected it with the ground. Thus elevated, the wire looked for all the world like the feeler of some gigantic insect, and hence it came to be called an "antenna." Wires were similarly elevated at the receiving station with corresponding good effect. . . .

—Kaempffert: *Signaling and Talking by Radio in A Popular History of American Invention.*

Science News-Letter, May 7, 1927

May 14, 1796—Jenner, an English country doctor, inoculated James Phipps, age 8, with cowpox. Later he inoculated the boy with smallpox, which did not react. This was the first experimental proof of the efficacy of vaccination.

The more accurately to observe the progress of the infection, I selected a healthy boy, about eight years old, for the purpose of inoculation for the Cow Pox. The matter was taken from a sore on the hand of a dairymaid (Sarah Nelmes), who was infected by her master's cows, and it was inserted, on the 14th of May, 1796, into the arm of the boy by means of two superficial incisions, barely penetrating the cutis, each about half an inch long.

On the seventh day he complained of uneasiness in the axilla, and on the ninth he became a little chilly, lost his appetite, and had a slight headache. During the whole of this day he was perceptibly indisposed, and spent the night with some degree of restlessness, but on the day following he was perfectly well. . . .

In order to ascertain whether the boy, after feeling so slight an affection of the system from the Cow Pox virus, was secure from the contagion of the Small Pox, he was inoculated the 1st of July following with variolous matter, immediately taken from a pustule. Several slight punctures and incisions were made on both his arms, and the matter was carefully inserted, but no disease followed. The same appearances

were observable on the arms as we commonly see when a patient has had variolous matter applied after having either the Cow Pox or the Small Pox. Several months afterwards he was again inoculated with variolous matter, but no sensible effect was produced on the constitution.

—Edward Jenner: *An Inquiry into the Causes and Effects of the Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, Particularly Gloucestershire and Known by the Name of the Cow Pox.*

Science News-Letter, May 7, 1927

May 16, 1910—The Earth passed through the tail of Halley's comet.

Many readers will recall the return of Halley's comet in 1910. This wanderer comes close to the sun once in 76 years. Halley was the friend of Newton, who aided in the publication of the "Principia," and who used Newton's principles, then newly framed, to compute the orbit of this famous comet of 1682. Halley identified it with the comet observed by Apian in 1531 and by Kepler in 1607, and fixed its return for 1758-9. Sure enough, it reappeared on Christmas day, 1758. Since then it has been observed in 1835 and 1910. The present author saw it from Mount Wilson, California, in the early morning, just as twilight was beginning to show its first faint glow in the east. The comet's head was just below the horizon, and its tail stretched beyond the zenith like a gigantic searchlight beam. It was thought by some that the tail might interpose between the earth and sun on May 16, 1910, and possibly dim the sun's effulgence. But measurements of the solar radiation showed nothing remarkable.

—Abbot: *The Earth and the Stars.*

Science News-Letter, May 7, 1927

EDUCATION

Undiscovered Genius

Quotation from *THE INFLUENCE OF NURTURE UPON NATIVE DIFFERENCES.* By Truman L. Kelley. New York: The Macmillan Co.

The churchman's view of the Middle Ages, "Oddity is an evil and must be cut off," is the schoolman's view of today. Its persistence throughout the ages points to its deep root in human nature—that is, in the psychology of the one who has control of others. Not until the teacher gives up the desire to cast all others in the high mold represented by himself will the resentment of oddity cease. . . .

When established social routines are forsworn we find chess-playing and musical geniuses of ages 8 or 10, and when we do, we immediately pity the poor distorted creatures and exercise our beneficent influence to round them out, and we succeed so well that these youthful geniuses are seldom heard of in later life. Only a few creep through the barrage, and a few others avoid it by being neg-

lected waifs as children and shunned as peculiar as adolescents, so that it is only when full blown that they are "discovered" as saviors of mankind. Why should we not have hundreds of such where we now have tens? We, the schoolmen of America, can have, if we open our hearts to the concept that frequently in the small frames that pass in review before us are greater minds and larger visions than our own.

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CHEMISTRY

Benzene

This week's prize winning poem in the Science Service scientific poetry contest.

Go drill your wells for compounds
aliphatic,
You're welcome to the oils and
gasoline;
But let me have the spirits aromatic
Derived from old C_6H_6 , benzene.

The custom is to speak of him po-
tently,
As "parent compound" of what
chemists call
The aromatic series, but more lightly
He's named "primeval grandpa" of
them all.

Consider all the products without
number—
Explosives, plastics, flavors, per-
fumes, dyes—
Which serve us while we work or
play or slumber,
Or please our tongues, our noses
and our eyes.

They're made from plain old benzene
or his cousins,
With hexagons all trimmed in varied
styles;
Each new arrangement leads to more
by dozens,
With C, H, N, S, O in ranks and
files.

If you desire a task to keep you busy,
Just study coal tar and the benzene
ring;
Your head may whirl and leave you
somewhat dizzy,
But you will find there's system in
the thing.
For me, I'd rather work with Crum
Brown-Gibson's
Ingenious rule of where new groups
should go
Than ponder over plays like Henrik
Ibsen's
Or conjugate the Latin verb for
know.

—Julian F. Smith.

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