Anniversaries of Science

July 4, 1828—The first rail of the first steam railroad opened in the United States was laid.

The first American railroad to be constructed with the intention of using steam locomotives only, was the South Carolina Railroad, commenced in 1827; but the first road to be opened was the Baltimore & Ohio, which was partly put in operation for service in 1830. Their first rail was laid on July 4, 1828, by Charles Carroll, of Carrollton, the only then surviving signer of the Declaration of Independence.

—Bannard and Kaempffert: *The Story of American Railroading* in *Popular History of American Invention.*

July 4, 1920—Major-General Gorgas died. He was ex-Surgeon-General of the U. S. Army, and the foremost sanitary engineer of the Panama Canal.

The control of yellow fever by anti-mosquito work was soon demonstrated in a very big way. The Army of Occupation in Cuba took up at once the task of ridding Habana from the disease and incidentally from malaria. How well this was done all the world knows, and the active director of the work, Dr. Gorgas, stepped at once into the light of fame. . . .

It was not long, however, before all of this was overshadowed by the magnificent results by Gorgas in his administration of the sanitary affairs in the building of the Panama Canal. The results of Gorgas' work proved that the tropics may be inhabited by the white race—a fact of tremendously far-reaching importance to the future of the world.

—L. O. Howard: *A Fifty-year Sketch History of Medical Entomology and Its Relation to Public Health* in *A Half Century of Public Health.*

July 7, 1911—The Fur Seals Convention between Great Britain, the United States, Japan and Russia was signed at Washington. It prohibited the killing of fur seals for 15 years and thereafter until a new agreement should be asked by any of the signatory powers. At the present time it is still in force and will remain so indefinitely.—*Bureau of Fisheries, Dept. of Commerce.*

July 8, 1842—An eclipse whose path passed through parts of France, Italy and Austria enabled many detailed observations to be made.

The hour of the commencement of the eclipse drew nigh. More than twenty thousand persons, with smoked glasses in their hands, were examining the radiant globe projected upon an azure sky. Although armed with our powerful telescopes, we had hardly begun to discern the small notch on the western limb of the sun, when an immense exclamation, formed by the blending together of twenty thousand different voices, announced to us that we had anticipated by only a few seconds, the observation made with the unaided eye by twenty thousand astronomers equipped for the occasion, whose first essay this was. . . . But when the sun, reduced to a very narrow filament, began to throw upon the horizon only a very feeble light, a sort of uneasiness seized upon all; every person felt a desire to communicate his impression to those around him. Hence arose a deep murmur. The hum of voices increased in intensity as the solar crescent grew more slender; at length the crescent disappeared, darkness suddenly succeeded light, and an absolute silence marked this phase of the eclipse, with as great precision as did the pendulum of our astronomical clock. . . . After an interval of solemn expectation, which lasted about two minutes, transports of joy, shouts of enthusiastic applause, saluted with the same accord, the same spontaneous feeling, the first reappearance of the rays of the sun.

—Arago, a description of the eclipse of 1842.

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GENERAL SCIENCE

The Scientist

The air is rent with shout and cry,
And I hear drum and horn;
The purple banners flap and fly,
The mighty emperor passes by
With curling lips of scorn.

He boasts contempt for little things
And prates of noble mind,
He has for servants none but kings,
He takes but costliest offerings—
But the emperor is blind.

His chariot spurns my footsteps slow,
While I plan a motor car,
He tramples his crops (that I helped to grow),
And his rich dyed robes may fold and flow,
But the colors I drew from tar.

I have read the secret of the air
In a little heap of rust,
And marvels of nature I have laid bare
And enriched the world beyond compare
By a few gray grains of dust.

I tell from scratches on the stones
The story of the earth,
And what to me are crowns and thrones
When I learn from scattered flints and bones
How mankind came to birth!

By soot and graphite, char and coal
(And the emperor's diamond ring)
By the heaps of slag when I take toll,
This message I read as on a scroll:
There is no "little thing."

—*Preston Slosson, in The Independent.*

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A locomotive whistle was recently heard by a balloon observer at a height of a mile and a half.

PSYCHOLOGY

Ears Distinguish Close Sounds

How far apart two sounds need to be in order that they may be recognized as two by a person has been studied by Dr. Arthur L. Bennett, of Union College, and his results show that the ears are much more sensitive to sound differences than we often suppose. If the two sounds occur close together they may seem as one, but if one sound comes in one ear, and the second in the other, they may still be recognized as separate, the physicists were told. An electrical device made it possible to have as small an interval of time as a hundred thousandth of a second between the sounds.

Everyone on whom the experiment was tried was able to distinguish the two sounds when they occurred as far apart as a thousandth of a second, while the average could distinguish them at a ten thousandth of a second apart. One person was found, said Dr. Bennett, who could recognize the sounds when less than a millionth of a second apart.

Science News-Letter, July 2, 1927

GENERAL SCIENCE

Icarus in Science

By Arthur Stanley Eddington

In ancient days two aviators procured to themselves wings. Daedalus flew safely through the middle air and was duly honored on his landing. Icarus soared upwards to the sun till the wax melted which bound his wings and his flight ended in fiasco. In weighing their achievements, there is something to be said for Icarus. The classical authorities tell us that he was only "doing a stunt," but I prefer to think of him as the man who brought to light a serious constructional defect in the flying machines of his day. So, too, in Science. Cautious Daedalus will apply his theories where he feels confident they will safely go; but by his excess of caution their hidden weaknesses remain undiscovered. Icarus will strain his theories to the breaking-point till the weak points gape. For the mere adventure? Perhaps partly; that is human nature. But if he is destined not yet to reach the sun and solve finally the riddle of its constitution, we may at least hope to learn from his journey some hints to build a better machine.—Quotation from *Stars and Atoms—Yale University.*

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In Chinese writing each character is made of from one to 54 separate strokes of the brush.