Anniversaries of Science

July 23, 1916—Sir William Ramsay, discoverer of the rare gases in the atmosphere, died.

It is well known to you all how the remarkable observation of Lord Rayleigh that nitrogen from the atmosphere possesses a greater density than that prepared from ammonia or nitrates led to the discovery of argon, a new constituent of the air. I need not say that had it not been for this observation the investigations of which I shall speak this evening would never have been carried out, at least not by me. You will also doubtless remember that the search for some compound of argon was rewarded, not by the attainment of the quest, but by the discovery, in cleveite and other rare uranium minerals, of helium, an element whose existence in the chromosphere of the sun had already been suspected. And, further, I hardly need to recall to your minds that the density of helium is in round numbers 2, and that of argon 20, and that the ratio of specific heats of both these gases, unlike that of most others, is 1.66. . . .

From slight irregularities in the physical constants of argon, and from the probable place in the periodic table of the new elements, it seemed likely to Ramsay that there are other gaseous elements similar to argon and helium. After searching for them in many minerals, he tried to isolate them from liquid air by fractional distillation.

It seemed to me a pity to boil all the air without collecting the last residue; for, though it seemed improbable that the looked-for element could be here, yet it was, indeed, possible that a heavier gas might accompany the argon. This suspicion was confirmed. The residue from the liquid air consisted chiefly of oxygen and argon, and, after removing the oxygen and nitrogen, beside the spectrum of argon were two brilliant lines, one in the yellow, which was not identical with D_3 of helium, and one in the green. This gas was decidedly heavier than argon; its density was 22.5 instead of the 20 of argon. We had, therefore, discovered a new body, which was an element, for the ratio between the specific heats was 1.66. To this element we gave the name "krypton." Up to this time we have not followed further the study of this element. . . . It was, however, our first intention to examine the lightest part of the argon. In many, however, we remarked in passing, that the wave-length of the green line of krypton is exceedingly close to that of the northern lights, being 5,570, while the latter is 5,571. . . .

We first directed our attention to the lighter fractions, for these had for us the greatest interest. The density of this gas was found to be 14.67; the ratio between the specific heats was, as usual, 1.66, and the spectrum showed, beside the well-known groupings of argon, a large number of red, orange and yellow lines of varying intensity. Evidently we had before us a new element which was contaminated with argon. . . . which we will hereafter designate by its name of "neon." . . . .

The heaviest of these gases we have weighed, although in impure condition. Its density is 32.5. I need not call your attention to the fact that there is space for an element of the helium group between bromin and rubidium. Such an element should have an atomic weight of 81 to 83, which corresponds to a density of 40.5 to 41.5, under the very probable supposition that, like the other gases of this group, it is monatomic. The spectrum of this gas, which we have named "xenon"—the stranger—has many lines; none of these are of marked intensity, and in this respect the spectrum resembles somewhat that of argon. It is also analogous to argon in another particular, that the spectrum undergoes a remarkable change when a Leyden jar is put into the circuit. As with argon, many new blue and green lines appear, while other lines, mostly in the red, either disappear or lose much of their intensity. Further than this we have not proceeded in studying xenon.

—Ramsay: *The Recently Discovered Gases and Their Relation to the Periodic Law,* an address given in 1898.

July 24, 1912—The First International Eugenics Congress opened in London.

Let it be asserted most emphatically that, if there is anything in the world which eugenics or race-culture does *not* promise or desire, it is the production of a uniform type of man. This delusion, for which there has never been any warrant at all, possesses many of the critics of eugenics, and they have made pretty play with it, just as they do with their other delusions. Let us note one or two facts which bear upon this most undesirable ideal.

In the first place, it is unattainable because of the existence of what we call variation. No apparatus conceivable would suffice to eliminate from every generation those who varied from the accepted type.

In the second place, this uniformity is supremely undesirable from the purely evolutionary point of view, because its attainment would mean the arrest of all progress. All organic evolution, as we know, depends upon the struggle between creatures possessing various variations and the consequent selection of those variations which constitute their possessors best adapted or fitted to the particular environment. If there is no variation there can be no evolution. To aim at the suppression of variation, therefore, on supposed eugenic grounds (which would be involved in aiming at any uniform type of mankind) would be to aim at destroying the necessary condition of all racial progress.

—Saleeby: *Parenthood and Race Culture.*

July 25, 1909—M. Blériot flew his monoplane across the English Channel.

The next experimenter to be mentioned is Louis Blériot. He began his experiments in 1906, and has built and broken more machines than any other aviator in the world. He has built 12 machines and broken about 15, that being accomplished by rebuilding the same machine after smashing it. He is a man of tremendous pluck and wonderful imagination, and therefore tries all sorts of things. . . .

On the 25th of July Blériot attempted to cross the British Channel and succeeded. . . That trip comprised a distance of 33 miles and was made in 37 minutes. It created great excitement, great applause, and great wonder, although, as a matter of fact, it was perhaps not as difficult a feat as the previous flying across country, but it appealed very much to the imagination.

—Chanute: *Recent Progress in Aviation,* an address given in 1909.

Science News-Letter, July 16, 1927

AVIATION

Model Airplane Contest

Thousands of boys and girls on organized playgrounds in some 800 American cities are expected to compete this summer in a national model airplane construction and flying contest sponsored by a committee headed by Orville Wright, airplane pioneer.

The recent achievements of aviation, particularly the Lindbergh flight inspired this competition which will be conducted by the Playground and Recreation Association of America. It will come to a climax at national finals to be held in Memphis in October.

The contest was suggested by Dr. John H. Finley, educator and editor, as a means of interesting the youth of America in the scientific principles underlying aviation. The three federal air secretaries, F. Trubee Davison, of the War Department; Edward P. Warner, of the Navy; and William C. McCracken, of the Commerce Department, have accepted membership on the contest committee.

Science News-Letter, July 16, 1927

CHEMISTRY

"Alchemist" Tests Fail

If ordinary lead was changed into mercury and the rarer element thallium by two Dutch experimenters over a year ago, repetitions of the process here have not been successful.

In a communication to the English scientific magazine *Nature,* Dr. L. Thomasen, of the Norman Bridge Physics Laboratory of the California Institute of Technology, states that he has tried to transmute the elements by the same method. More powerful electric currents were employed than those used by Smits and Karssen, the Dutch scientists. But Dr. Thomasen obtained no evidence of the slightest trace of thallium or mercury having been formed from lead.

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Plants grown in a soil rich in lime generally contain more lime than plants grown in soil deficient in this material.

India ink, invented by the Chinese about 1200 B. C., was made by mixing very fine soot with gelatin prepared from asses' skin.