Anniversaries of Science

February 6, 1804.—Death of Joseph Priestley, the discoverer of oxygen.

I had so little suspicion of the air from the *mercurius calcinatus,* etc., being wholesome, that I had not even thought of applying to it the test of nitrous air; but thinking (as my reader must imagine I frequently must have done) on the candle burning in it after long agitation in water, it occurred to me at last to make the experiments; and, putting one measure of nitrous air to two measures of this air, I found not only that it was diminished, but that it was diminished quite as much as common air, and that the redness of the mixture was likewise equal to a similar mixture of nitrous and common air . . . . The next day I was more surprised than ever I had been before with finding that, after the above-mentioned mixture of nitrous air and the air from *mercurius calcinatus* had stood all night . . . . a candle burned in it, even better than in common air.

—Priestley: *Experiments and Observations on Different Kinds of Air.*

February 6, 1922.—The President of the Royal Geographical Society announced that the expedition to climb Mount Everest was under way.

Sir Martin Conway, M.P., the famous mountaineer and leader of the first expedition to the Himalayas, expressed the opinion in a lecture at the Hotel des Alpes, Mürren, that the present attempt to ascend Mount Everest was not likely to succeed . . . . "In the first place," he said, "We are in complete ignorance as to the nature of the mountain. It is only known by distant views of the upper part. Nobody before the present expedition has been within forty miles of the mountain, and only one person has been as near as that. The Himalayans are much younger than the Alps and the Welch hills and differ from the former in being much more precipitous and much less rounded-off by the action of the forces of denudation inasmuch as they are in an earlier stage of disintegration. The result is that it is the exception to find a peak that is at all climbable."

Sir Martin's own experience of the Himalayas prompted him to the belief that it would be useless to base hopes on the fact that all the Alpine peaks had been conquered. The assumption that all the peaks of the world are vulnerable was far too sanguine.

—*Manchester Guardian Weekly,* September 2, 1921.

February 7, 1922.—Mme. Curie was elected a free associate member of the French Academy, the first time a woman was so honored.

At the close of the year 1906, Madame Curie was appointed a professor in the scientific department of the University of Paris. She continued her splendid work in a tiny laboratory—far too small—established in Rue Cuvier. Later, upon the University acquiring the land between Saint-Jacques and Ulm Streets, a new street named for Pierre Curie was laid out through the length of this property, and a laboratory specially designed for the use of Madame Curie was started in coordination with the Pasteur Institute. The present arrangement is this: on one side is the special laboratory for Madame Curie's research work. On the other side is a wing belonging to the Pasteur Institute where researches are carried on in the application of radium and its emanation in the treatment of diseases, particularly those of a cancerous nature. Between these two buildings is a small structure containing the precious substance. . . .

At the present Madame Curie is devoting herself entirely to her work; to her scientific researches, to teaching, and to the organization of a radio-therapeutic service that she is conducting in collaboration with Dr. Regault of the Pasteur Institute.

—Paul Appell, President of the Academy of Paris: *A Sketch of Madame Curie,* written for *Science Service,* 1922.

February 8, 1672.—Isaac Newton reported to the Royal Society his discovery that "Light is composed of a heterogeneous mixture of differently refrangible rays."

I must not neglect to mention also Newton's contributions to optics, which, while not of the fundamental importance of those we have just been discussing, were nevertheless worthy of their author. We need only to recall that he investigated the composition of white light, the colors of thin films, diffraction, and the possibilities of achromatism in refracting telescopes. He was not infallible; for he decided that it was impossible to make an achromatic refractor, and he supported the corpuscular theory of light against the undulatory theory of Huygens. In both cases, however, the evidence obtainable in his time strongly supported his position; and I think it was this, rather than the mere authority of his name, which caused the corpuscular theory to prevail during the following century.

—Henry Andrews Bumstead: Physics in *The Development of the Sciences.*

Science News-Letter, January 29, 1927

ENTOMOLOGY

Airplane War on Gypsy Moth

Death from the air is facing the gypsy moth. Experimental blows have already been struck and promise success in the chemical warfare against this pest of our forest foliage. Arsenate of lead, dusted from aeroplanes, gave considerable control in test areas in New England, according to reports from D. F. Barnes and C. F. Potts of the Melrose Highlands laboratory of the United States Bureau of Entomology. The difficulty in such treatment is to get an even distribution of effective quantities over the infested areas. Hence dusting should be done on days when the wind is low and at a time when the air has a strongly rising relative humidity. The experiments were particularly successful in the case of plots dusted when the gypsy moth larvae were small.

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CHEMISTRY—MEDICINE

How Drugs Poison Bacteria

The synthetic drugs of modern chemotherapeutics act as "shock troops," and the antitoxins which they induce the body to form are the "mopping-up squads" in the battle against invading bacteria.

This, broadly stated, is the kernel of the theory of the action of such products of the dyestuffs laboratory as salvarsan and Bayer 205 advanced by Dr. Wilhelm Roehl, expert of the Elberfelder Farbwerke.

"The first action of chemotherapeutic substances," he said, "is directly upon the germs themselves, poisoning them. The autonomic production of antitoxins by the body, which the drugs induce, is of secondary importance but valuable for the final destruction of the bacteria previously damaged by the chemotherapeutics."

The theory of the chemical action of synthetic drugs containing arsenic advanced by Dr. Paul Ehrlich, the inventor of salvarsan, best known of such arsenicals, is that, though such drugs are of extremely complex chemical structure, their final action on disease germs, is similar to that of the common arsenic used in rough-on-rats or in the too-popular present-day murder mysteries. The famous German scientist holds that the complicated organic arsenic compounds act by the reduction of the arsenic acid group they contain to arsenic oxid. He also holds that organic drugs containing antimony, vanadium, bismuth, mercury, silver, gold and platinum act in a similar manner.

Science News-Letter, January 29, 1927

SEISMOLOGY

East Has Earthquake Danger

People in the region of Philadelphia who think that their homes are free from all earthquake danger because no destructive quake has occurred there during the relatively brief period covered by American history need not feel so safe. For "the old ideas about regions of the earth's surface as being 'free of earthquakes' may be regarded as either erroneous, or at least of a purely relative character," Dr. Frederick Ehrenfeld, professor of geology at the University of Pennsylvania states. The geologic structure of the earth under the Philadelphia region, and especially the fact that it is located within an area less than two hundred miles wide from the seashore to the Blue Ridge and Allegheny Mountains, shows that there may be a strain in the region, and that earthquakes are easily possible.

Science News-Letter, January 29, 1927