

# The Origin of Soda Water

Chemistry

By EDWIN E. SLOSSON

It is the custom to call upon the school children of the country to contribute to memorials and monuments and movements of any sort which somebody else wants to have helped along.

Now if I should ever start a school subscription it would be for something really popular among the pupils. It would be for a monument to the inventor of soda water, and it would not be a dusty bronze statue over a dry marble basin, but a fountain in every schoolroom flowing freely the beverage that carbonates but does not inebriate.

The inventor was the Rev. Joseph Priestley, the discoverer of the chief element in the world, oxygen, and a chemist in whom we take a peculiar interest, for when England got too hot to hold him he sought refuge in Pennsylvania, where his home in Northumberland is a shrine to which American chemists pay pilgrimages. He was triply distrusted and ill-treated in his native land on the grounds that he was a republican, a non-conformist and a chemist, so a mob burned up his home and laboratory in Birmingham.

## Flowers Without Soil

Water grown roses and other flowers, said to be more fragrant than those grown in the soil, may be put on the market soon if methods developed by W. F. Gericke, assistant plant physiologist of the University of California Experiment Station, are exploited commercially.

Mr. Gericke, who plants his flowers in jars of water to which have been added the chemical elements essential to growth, has during the last eight months succeeded in growing to full fruition, or bloom, several thousand floral plants comprising about fifty commercially important species.

The method is said to involve a minimum expense. Once set in suitable containers, filled with a nutrient solution, roses, dahlias, carnations and other plants grew and developed normally without the solution being renewed and, in many cases, without even water being added to replace what was absorbed.

Since compounding the various culture solutions requires little time and since little or no attention is required once the seedlings have been "planted" and (*Turn to next page*)

While he was preaching in a chapel at Leeds he lived near a brewery and so became interested in the possibility of utilizing the gas which came off the vats. When he moved away from this favorable location he had to devise some means of preparing and collecting the incombustible gas, then called "fixed air." This led him to the invention of the pneumatic trough, which is still the main mechanism of the analysis and storage of gases. He also determined the solubility of carbon dioxide and employed it for charging beverages. Perhaps you would like to hear the full title of this epoch making paper of 1772. "Directions for impregnating water with Fixed Air in order to communicate to it the peculiar spirit and virtues of Pymont Water, and other mineral waters of a similar nature."

Priestley's experiments interested a Philadelphia physician, Dr. Philip Syng Physick, and he induced a druggist, Townsend Speakman, to prepare carbonated water for his patients. Speakman added fruit juice as a flavor and then and there the soda-water business was born, 1807.

Previous to Priestley only natural

## Long Light Waves Needed

Medicine

The red and yellow light rays of long wavelengths are just as important as the shorter violet or ultraviolet rays for normal growth and development, reports Dr. Charles Sheard of the Mayo Clinic.

Dr. Sheard and associates experimented with chickens, exposing different groups of them to sunlight from which the ultra-violet, red-yellow and green-blue rays respectively had been removed by special glass filters. At the same time, all the chickens were fed a diet rich in everything except vitamin D.

When either the red-yellow or the green-blue light was filtered out, the parathyroid glands, which play an important part in the process by which food is transposed into tissue and energy, increased greatly in size in order to maintain normal growth and development.

During the first two months the rate of growth of the chicks was greater under all filters when a small amount of cod-liver oil was added to the diet. At the end of six months' time it was found that the weights of chicks under (*Turn to next page*)

carbonated beverages were known but their use goes back to the remotest times, both in beverages charged with carbon dioxide by the fermentation of fruits and grains and in spring waters charged in the internal reservoirs of the earth. Mineral springs have been sought by the sick and suffering in all lands and ages. Wherever in Europe you find springs of carbonated water there you are likely to find the ruins of some Roman city, which probably remains to this day a fashionable resort whether it be called Bath, *Bad* or *bain*.

The effervescence of the waters seemed to cause effervescence of the human spirit for the spa has always been famous for its atmosphere of gayety and these pleasure cities are commonly called "watering places," but could better be called "carbonating places" for water could be had at home but people had to go long distances at great expense in time and money to "take the waters" at the bubbling spring. But now we can get such carbonated beverages at any drug store or grocery store and often in between.

*Science News-Letter, August 11, 1928*

## Chara Poisons Mosquitoes

Entomology

Mosquitoes have a hitherto unsuspected enemy in a humble aquatic plant that grows in many parts of the United States. Its name is *Chara fragilis*, and according to Prof. Robert Matheson and E. H. Hinman of Cornell University, who have investigated its properties, it not merely prevents mosquito "wrigglers" from growing to maturity in the waters it inhabits but actually kills them.

The two entomologists carried on observations on ponds where the *Chara* grew, and also planted it in experimental aquaria on which mosquitoes were then encouraged to lay their eggs. The eggs all hatched in due course, but hardly any of the larvæ lived to emerge as a full-fledged insect able to mar the peace of a porch or a picnic.

The specific property that makes *Chara* deadly to mosquitoes has not yet been discovered.

Borax has had another use added to the long list of things it is good for by Prof. Matheson and Mr. Hinman. They have discovered that a concentration of one and one-half parts in a thousand of (*Turn to next page*)