

CHEMISTRY'S MIRACULOUS COLLOIDS

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A group of executives sat tense and silent in an office in the RCA building in New York City. They stared with incredulous eyes at a purple orchid. A short time before it had been rescued from a pile of debris, a withered, yellowed thing. Now the petals were fresh and crisp, its colors vivid. It was blooming with new life, and would continue to do so for 16 or 17 days!

Dr. Frederick S. Macy, one of the country's outstanding bacteriologists, has added a teaspoonful of an amber-tinted liquid to the quart of water in the bottle which held the flower. Here was striking indication of the mysteries that ahead in that comparatively unexplored realm of science known as colloidal chemistry. It was one of innumerable experiments these gentlemen had been witnessing for a year or more, on behalf of their internationally known pharmaceutical company. A few days later they signed an 18 year contract for the rights to a solution similar to the one in Dr. Macy's bottle. They will invest more than \$2,000,000 a year in it from now on.

To gain a working conception of what colloidal chemistry is, consider that living tissues and organs are simply great masses of cells - billions of them. The energy, the very life force of these cells, is obtained from certain minerals and metals, among them iron, iodine, manganese, copper. There are some 32, with traces of as many others, in the human body. Colloidal chemistry is the science which converts those elements into particles so minute that they can be utilized by living cells.

Normally, nature supplies the cells with these elements in their colloidal form. Science has now learned to produce these colloids in the laboratory. "Lately, life has been prolonged by colloid action," says Dr. Macy, "and better knowledge of the subject will certainly result in prolonging the normal term of existence." In the case of the orchid, apparently copper in colloidal form was needed to restore the proper balance of the minerals and metals that comprised the life cells of the flower. Once that balance was restored, the cells began to function and the orchid lived again.

In the Colloidal Laboratories of America they have a motion picture which is as weird as anything ever shown on a screen - a movie of a headache. The actors are the nerves in a human head, magnified millions of times. You see the headache. Those nerve endings are tangled, twisting, writhing. Then you see the colloids enter. These rescuers, smaller than the blood corpuscles themselves, march straight to the spot where there is an unbalance of the vital metals. You see the nerves cease their twisting, relax, and assume their proper position.

Dr. Steinmetz, the wizard of electricity, devised a method of utilizing colloids in the treatment of sinus trouble. The Bide-A-Wee Home, New York's famous hospital for cats

and dogs, can cure mange in three days, where it used to take three months. A large Midwestern city was freed from the scourge of goiter when colloidal iodine was added to the water supply. A famous institution for the treatment of alcoholism is experimenting with a colloidal solution which apparently not only overcomes the effects of excessive drinking, but removes the craving for liquor as well. Such treatment consists of the introduction of metals - gold and iodine, in the case of alcoholism - which correct the unbalance caused by alcoholic poisons.

The effect of colloids is explainable in part by electric action. Sick and broken down cells are attracted to the colloids by electro-magnetic force, as iron filings are attracted to a magnet. The colloids carry those decayed or poisonous substances into the blood stream, and they are eliminated, the system meanwhile adapting what it needs of the colloids.

A simple illustration will suggest the immense powers that are being unsealed. Suppose we have a cube iron measuring an inch on each edge. The total surface would be six square inches. The electrical charge is on the surface; therefore, the greater the surface, the greater the charge; and if we divide the cube of iron into smaller pieces we increase the surface areas. By colloidal chemistry that iron cube can be divided into particles so minute that they are invisible, hence instead of six square inches of surface emanating electric energy, we have something like 127 acres.

In colloidal form iodine, for example, is one of the elements essential to the well-being of human cells. Yet if you should drink as much as two or three grains of free iodine, it would kill you. Dr. Macy, when explaining this, held up an eight ounce cup full of colloidal iodine. "There," he said, "is the equivalent of 740 grains of free iodine - enough to kill 300 men." And he drank it. In that form iodine is not only harmless but beneficial. The same is true of arsenic and other ly poisons.

Colloidal chemistry was evolved by David Graham, a British chemist, 50 years ago, but only recently has it been realized even by scientists what an enormous influence it is destined to have in medicine, agriculture, industry.

"We have television now," one of the world's greatest scholars said recently. "There is, as I see it, just one great development left for our time. That is in the understanding of colloidal metals. It is the "Fourth Estate of Matter" the other three being land, water, and air."

Says Dr. Macy: "The study of these phenomena constitutes the road to the ultimate in human knowledge."