METALLURGY

New Electric Heat Process To Make Magnesium Very Cheap

Metal Made By New Method Is Not Explosive, Is Strong And Light, and Costs Only Half What Aluminum Does

PRODUCTION of the extremely lightweight silver-white metal, magnesium, at only half the cost of heavier and more familiar aluminum is possible by a new "electrothermic" method that promises a virtual industrial revolution through distilling many metals from their ores.

This impending commercial development was revealed by Dr. W. S. Landis, vice-president of the American Cyanamid Company of New York City, in a technical paper before the Electrochemical Society in St. Louis.

Magnesium metal by the new process is actually of higher strength and better quality than that made by the old electrolytic process and production in considerable volume in several widely scattered parts of the world is expected.

Already magnesium alloyed with aluminum and copper is being used in aircraft and other construction where light weight is an advantage. With the lower costs of its electrothermic distillation from the plentiful ore, magnesite or magnesium carbonate, it may compete seriously with aluminum as the material used in all sorts of construction where weight counts. Magnesium metal is 1.7 times the weight of water, whereas aluminum is 2.4 times.

Because powdered magnesium (flashlight powder) explodes with a brilliant light, the metal is thought by some to be inflammable. Dr. Landis reassured his audience of chemists that this is not true if the pieces are reasonably thick.

Magnesium Pipe

He smoked a pipe made of magnesium metal as a demonstration.

Zinc can be recovered from ore by distillation or electrothermic process. So can cadmium. Mercury and arsenic have long been extracted by distillation and the processes used have not needed improvement by recent research.

Dr. Landis predicted that it will be quite feasible to produce calcium, strontium and barium, all rare in the metallic form, by use of the electric distillation furnace. Zinc and magnesium have been produced semi-commercially by the new processes.

The magnesium process begins with the calcining of the magnesite, a carbonate, to a dead burnt oxide. Heated by an electric furnace to temperatures around 2,200-2,300 degrees Centigrade, the magnesium oxide mixed with carbon in the form of anthracite coal or coke, gives elemental magnesium vapor and carbon monoxide gas. Under-cooled hydrogen gas is played on the magnesium vapor stream as it leaves the furnace and the sudden cooling produces magnesium powder, which finally is redistilled to metal of high purity. Since the powdered metal and the gases used are all highly explosive when mixed with air, the whole process must be conducted in tightly closed furnaces.

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MEDICINE

Colds Are Unscientific; Vaccines Help Some

THE common cold is what you might call unscientific. Whatever else you may and probably do call it, its unscientific aspects are what count when it comes to avoiding or getting rid of a cold.

The exact cause of colds has not yet been learned (one of their unscientific features) and consequently no vaccine that can be counted on for sure protection against colds has yet been devised, Dr. Leverett D. Bristol, health director of the American Telephone and Telegraph Company, told members of the American Public Health Association at their recent meeting. Because colds cause so much time to be lost from work, Dr. Bristol has gone pretty thoroughly into the cold prevention angle.

The most that can be said for vaccines, he found from his surveys of companies that had used them, is that they seem to cut down the severity, duration and complications of respiratory diseases. Apparently they do not lessen the actual number of colds. The reason for this goes back to the unscientific aspects of the cold. Only recently scientists have discovered a common cold virus, but they are still uncertain as to whether this virus is the sole causative agent of colds. Germs of the bacteria class seem to play a part, mostly in making worse the virus-caused cold by setting up other infections in the nose and breathing apparatus. It is in fighting these secondary infections that the present vaccines help.

Another unscientific feature about colds is that for the most part they are diagnosed, treated and reported, if at all, by laymen and there are no accurate statistics as to their frequency and no control records of results obtained with different forms of treatment and prevention. Consequently whatever apparent results in preventing colds have been achieved are mostly matters of opinion without much scientific, factual basis.

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PHYSIOLOGY

"Pep" Drug Found Useful In Relaxing the Eyes

OCULISTS will soon be dropping a new drug into eyes to help relax them preparatory to fitting glasses. It is benzedrine, the same potent and dangerous chemical whose "pepping up" effect is sometimes indulged in by overworked business men and students cramming for exams.

Dr. S. Judd Beach of Portland, Me., told the American Academy of Ophthalmology and Otolaryngology that weak solutions of the drug speed up and shorten the action of drops of atropine and other drugs that relax the eyes. The benzedrine hastens the return of the eyes to normal after the drops have been used.

Pain in the sinuses may cause a "gone to sleep" feeling around the ears and down the side of the neck. Drs. Olof Larsell and Ralph A. Fenton of the University of Oregon Medical School, Portland, Ore., reported that pain in the deep sinus structures at the back of the nose shrinks the blood vessels in the skin of the ear canal, the mastoid region and the side of the neck. This interferes with circulation and is transmitted to the brain in much the same way as pain from impaired circulation in the leg when the foot "goes to sleep."

These doctors also demonstrated that blood-destroying streptococci from the sinuses can travel along lymphatic channels into neck glands and simulate rheumatism, sometimes eventually causing serious lung inflammation.

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