CHEMISTRY

Chemical Rarities Made Cheap; Find Many Profitable Uses

Improvements in Tanning, Dyeing, Baking, and Other Industries Possible Through Synthesis of Maleic Acid

CHEMICAL curiosities that have recently become useful in scores of jobs from speeding up the aging of wine to protecting life from poison gas, a method of warding off colds and strengthening the body against other ailments, new resins that make textiles non-creasable and are strong enough to be moulded into chairs and window frames: these were among the scores of advances reported before the Chicago meeting of the American Chemical Society.

Describing as "utopian and distinctly American achievements" the working out of processes by which ordinary air is made to combine with benzene and naphthalene to produce cheaply and in abundance maleic acid, a laboratory rarity a short time ago, Dr. Charles R. Downs, chemical engineer of New York City, pictured some of the many uses to which this new industrial substance is already being put.

"It usually requires several years of aging for the precipitation of the excess tartar in wine," Dr. Downs said. "If the wine is bottled before the precipitation of tartrates is completed, it will lose commercial value because some tartrates will precipitate as undesirable. If, however, calcium malate is added to wine, even when young, any proportion of tartaric acid can be removed in a very short time. The acid is also used as a gas mask ingredient for absorbing ammonia vapors."

Versatile Maleic Acid

Maleic acid and related compounds have also been found to prevent the development of rancidity in stored fats and oils, serve successfully as new resins for lacquers and varnishes, aid the dyeing of textiles, replace advantageously acids commonly used in tanning, become a baking powder ingredient, aid the substitution of a chemically known salt for ordinary table salt for those who cannot tolerate table salt, and in the form of little tablets conveniently disinfect small quantities of water for drinking purposes through the release of free chlorine.

Carotene, the vitamin A carrying yellow coloring matter of carrot, butter, whole milk and other fruits and vegetables, is much more valuable than nutritionists now believe and its use in the diet should be increased, Dr. A. F. O. Germann, of Cleveland, told his fellow-scientists. He said that prehistoric man was able to resist many diseases that afflict civilized men because he ate quantities of this substance.

Citing recent recognized research, Dr. Germann said that "a carotene supplement to the normal diet is the best known preventive of upper respiratory infections; brings about improvement in vision in human cataract; gives promise of relief in certain allergic conditions such as house dust allergy and hay fever; causes more rapid healing of wounds, and gives promise of greatly improving the general health and well-being."

Dr. Carleton Ellis, of Montclair, N. J., described unusual uses for the newest synthetic resins, the molded products which first replaced celluloid and hard rubber articles but are now finding a much wider field of application. Tanks nine feet in diameter have been made from one new material of the phenol-aldehyde class, he said. It is now possible to mold articles as large as chair backs and legs, table tops and radio cabinets.

Moldings made from urea and formaldehyde, Dr. Ellis continued, are strong, light in color and very resistant to darkening under influence of light. Articles can be made from them in a great variety of bright colors. When textiles impregnated with these resins are heated, the resins set and the cloth becomes non-creasable.

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Woman Scientist's Discovery Cures Stubborn Skin Disease

STUBBORN skin infection such as ringworm, often called athlete's foot, and many eczemas should become less dreaded following the discovery of chemicals unusually effective in their treatment, by Cornelia Burwell, young research worker of Ann Arbor, Mich. Miss Burwell, who was graduated from the University of Michigan only three years ago, reported her investigations to some of the country's most prominent medical chemists at the recent Chicago meeting of the American Chemical Society. It was her second appearance before that body.

Complicated organic compounds built up in the laboratory as salts of various fatty acids made from petroleum were first found by laboratory test to bring death to skin fungi. But their effectiveness in actual treatment of disease was even greater than the tests indicated, Miss Burwell stated, probably because they very readily penetrate the skin.

Remarkable results of the treatment of more than one hundred cases of ringworm and a number of eczema and dandruff patients were reported. It was pointed out that the salts do not cure, but merely establish a normal condition in the skin so that it can function properly and heal itself.

Miss Burwell also described a number of cases of the constitutional diseases, acne and psoriasis, in which the troublesome and unsightly skin outbreaks healed, at least temporarily, and with the prospect that they can be kept down by continued treatment.

The report was received with interest by Miss Burwell's older and more experienced fellow-scientists who, from long familiarity with the uncertainties and difficulties of diagnosing and treating skin infections, expressed the hope that the new chemicals meet the severe requirements of medical workers.

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