

MEET ETHYL AND METHYL ALCOHOL

Two Most Prominent and Interesting Members of the Family.

MANY OFFSPRINGS ARE KNOWN

Difference Between Grain and Wood Alcohol Clearly Described—Fatalities Due to Amateur Attempts to Make Grain Alcohol.

Chicago.—While there are seventeen or more alcoholic products known in chemistry, there are two of general commercial use in the country—ethyl alcohol, or ordinary alcohol, the kind we used to be able to buy "for medicinal purposes," and methylated spirit, or industrial alcohol, which is popularly called "wood alcohol," and which does contain an amount of that fluid.

Ethyl or ordinary alcohol is formed by the spirituous or alcoholic fermentation of saccharine juices. The fermentation must be completed before it is distilled. It is made from grain, either corn, wheat, or barley. This is also known as grain alcohol. The formula is C₂H₅OH.

Methylated spirit, or industrial alcohol, is made of ninety parts of ordinary alcohol and ten parts of wood alcohol—methyl alcohol.

Source of Wood Alcohol.

Wood alcohol is obtained by the dry distillation of wood. The common method of obtaining this is to take cordwood which has been seasoned for about two years—beech, maple, and birch are best—place it in iron or steel retorts over a slow fire. The intensity of the fire is gradually increased as the distillation progresses, until at the end of from twelve to eighteen hours nothing remains in the retort but charcoal. The distillate is passed through a condenser, and the liquid thus gathered is allowed to set in tanks until the greater part of the tarry matter in it has subsided. The lighter part is then drawn off and saturated with slaked lime to fix the acetic acid. It is then distilled a second time and the distillate sent to the refineries as wood alcohol. Sawdust or any woody fiber or cellulose can be used in place of cordwood.

Wood alcohol, either in its pure form or as an ingredient of industrial alcohol, is a poison, and has a selective action upon the optic nerve, in which it often induces a condition of permanent atrophy which results in total blindness.

Denatured Alcohol.

For some purposes "completely denatured alcohol" is made by adding to industrial alcohol a little benzine or pyridine to spoil the taste and render it offensive. Denatured alcohol may be made more cheaply than ordinary alcohol by using cheaper materials, such as any starchy vegetable substance, or a waste byproduct, as the poorest grade of molasses or the waste of a canning factory.

"It is probable that a good deal of the wood alcohol that is being distributed as a beverage is the result of the attempts of amateurs to make ordinary alcohol. In their ignorance they use vegetable substances such as potato peelings, and, by using too intense a fire and making the distillation without having first allowed fermentation to take place, produce methyl or wood alcohol instead," said J. H. Nusbaum, a chemist.

TEST NEW 'MOVIE' INVENTION

New York Theater Tries Concave Screen, Giving Effect of Third Dimension.

New York.—A concave motion picture screen that may revolutionize the movies was tried out at a local theater today.

It is said to give an effect of a third dimension—an appearance of thickness or depth—that relieves the eye strain. A group of scientists witnessed the experiment.

Dr. Louis Pech, head of the faculty of medicine at the University of Montpellier, France, the inventor, supervised the exhibition.

Dr. Pech ascribes the relief from eye strain to his belief that the eye functions normally when it sees things of three dimensions, even if the appearance of the third dimension is an illusion.

BRITAIN FACES MEAT GLUT

Importers Complain Against Vegetarian Tendency, Caused by the World War.

London.—Englishmen used to be considered the greatest meat eaters in the world.

Now, declares the Society of Meat Importers, the average Englishman eats 23 per cent less meat than he did before the war. Unless he can be induced to eat more of it, the country will be faced with such a glut of meat as it has never had before.

The annual consumption of meat in the United Kingdom before the war was about 1,800,000 tons, say the importers. It is now only 1,200,000 tons. And this, they contend, is due largely to the high cost still maintained. Englishmen and Englishwomen, too, are not so fond of meat as ever, but they cannot afford to eat as much of it as they used to.

AIRPLANE TO DEVELOP CHINA

American Commercial Attache Points Out How Problem Facing That Country May Be Met.

The keynote of the great problem of development which is facing China is transportation. The American commercial attache at Peking, Mr. Julian Arnold, has laid emphasis on this in an article in the Chinese Recorder—"China's Economic Problems and Christian Missionary Effort." Mr. Arnold deals with the necessity of preparing the Chinese people for the great economic change which is upon them. Railways will mean much to China, but the necessity for the training and preparation of which Mr. Arnold speaks is shown to be distinctly urgent when Prof. Middleton Smith's views on the use of airplanes to China are known. China is a land of waterways, and these waterways afford the necessary existing lines of transportation along which, to secure the success of commercial aviation, airdromes and supply depots should be established. Schools of technical training should supply the necessary Chinese skilled labor, and with these aerial services established, Professor Smith foresees such an incalculable increase in the rapidity of communications as completely to revolutionize the country internally and add to its deep importance as a world factor.

HAD AN OBJECT IN POSING

Moose Didn't Stand for Her Photograph Just to Accommodate the Camera Holder.

A moose out in the wilds does not stop to pose for her picture. There is generally a reason for the peculiar actions of wild things. In the current issue of the Hunter-Trapper-Trapper, published in Columbus, O., hunters write of their experience.

"We had an early start Thursday and Sam soon proclaimed that his pipe foretold moose. The first bend was rounded and knee-deep in the water stood a fat sleek cow. Our canoe advanced toward her, the camera set for an exposure. Sam called softly and she advanced a hundred feet toward us, ears erect, with a curious 'what are you' manner.

"At 75 feet she stopped and posed for the picture, and then waited until we were 50 feet away before she turned into the woods. At the top of the bank she waited for us to pass before crashing into the timber. Her action was explained when we turned the bend and at the water's edge saw her calf, a fine four or five months' old fellow, which climbed the bank and was away after her at once."

New Cloth for Hard Wear.

A new textile fabric which, it is claimed, will tend to lower the present high cost of men's clothing is being placed on the market by a Pudsey (Yorkshire) manufacturer, writes United States Trade Commissioner Henry F. Grady from London. The London agents of the manufacturer state that the new cloth is made entirely of silk noll (or short fibers); and that, while superior in wearing properties to a pure worsted, it can be sold at the price of the best wool fabrics. It is said to be strong and almost untearable, very suitable for hard wear, and can be obtained in greys, browns and blacks.

No Novelty.

"As I came from the station just now," said a recently arrived guest, "I noticed a crowd in front of the Right Place store and heard considerable yelling. What was the excitement?"

"A farmer and the storekeeper were telling what they thought of each other's infernal hoggishness in wanting five prices for the stuff they had to sell," replied the landlord of the Petunia tavern. "But there wasn't any particular excitement—it happens every day. The crowd merely gathered in the hope that they might accidentally say something new and interesting."—Kansas City Star.

Weds During His Lunch Hour.

How to be married though working was the title of a little sketch staged the other day by E. W. Grieder, a printer employed on the St. Paul Dispatch.

Grieder faced a problem. He was slated as a principal in a marriage ceremony. His only spare time was a half hour for lunch.

So he called his fiancée, Miss Clara Lovitz, by telephone, arranged with her to meet him in the office of Henry Gaillet, court commissioner, and the ceremony was performed. Grieder then took lunch and returned to work.

Valuable Parasitic Fly.

A recent agricultural department bulletin states that a parasitic fly, *Comptosia clypeata*, has been used with great success to destroy gypsy moth and brown-tail moth in New England. It will also aid in the control of other insect pests. A few years ago the white-marked tussock moth was a serious pest in New England, but has practically disappeared since *Comptosia* became established. The cabbage lutea became the celery worm and the fall worm, the celery worm and the fall worm have all been reduced by the activities of the new parasite.

Quick Action.

"The war made exceptional opportunities," a fellow could begin at the bottom and at the same time go over the top."

DOG AS CHILD'S COMPANION

With the Right Kind of Animal, Youngster Will Seldom Stray Beyond Safe Bounds.

An observation of our friend, the farmer, that "I dunno's I ever heard of a child's gettin' really lost that had a dog to play with," merits consideration.

Sweeping generalizations are unsafe, but there is no question of the value of a dog as a child's playmate and protector. Some dogs have the runaway instinct themselves. The call of the wild stirs within them—they are vagrants by nature. Such a dog would delight to have human company in a runaway journey and are not safe companions for children. But the right kind of dogs, and there are many of them, who have been brought up with children, are quick to assume the role of guardian. With such a dog no child would ever get lost; indeed, would not be allowed to stray beyond bounds.

We have in mind a Great Dane whose temper was such that, although we were acquaintances, we never ventured to enter his domain, if he were around, until he had had time to satisfy himself that we could pass muster. Once satisfied you were approved by the god he called master and goddess he called mistress, he had an embarrassing way of standing on his hind legs and placing his front ones around your neck—a caress quite likely, if you were not well braced, to knock you off your feet. He was the inseparable companion of the baby of the family—a boy of four or five—who had a predilection for running away. When the youngster started, the Great Dane followed; when the child reached the gate, the dog blocked his way, gently but firmly. For anyone to have touched that child when the Dane was near would have cost him his life—unless he had first shot and shot to kill.

The intelligence of the dog is a source of constant amazement to those who know him best and love him most; and of his devotion there is, happily, no question. If all children had dogs as playmates there would be fewer to run away and get lost.—New Bedford Standard.

Varnish Not Full Protection.

Wood is not wholly protected from moisture by varnishing, which is shown by tests of the Forest Products Laboratory in Wisconsin to have only a retarding effect. The woods used were yellow birch, basswood, red gum, African mahogany, white ash, white pine, Sitka spruce, southern yellow pine, bald cypress, incense cedar, Port Orford cedar, and sugar pine; but there was no perceptible difference in the different species in the moisture absorbed through the coating. Three coats of high-grade spar varnish were applied to four panels of each species, two panels being brush-coated and two dipped with a special machine designed to give an even coat. The panels were dried 72 hours between coats and ten days after the final coat; and were then exposed 17 days to an atmosphere practically saturated with moisture. The brush-coated panels then showed ten grammes of moisture per square foot of surface; the dipped, between four and five grammes.

Still Believe in Fairies.

A case just heard in the Tipperary courts reveals the survival in Ireland of a belief in the fairies. It was a claim for compensation for cutting trees and bushes around a fort at Shanbally. The claimant said he especially valued these bushes as "there was dancing and lights there every night."

It was alleged that the defendant had taken away the bushes to evict the fairies.

The judge pointed out that if there were fairies they would visit their anger on the man who dared to cut the bushes and not on the owner. He did not accept the fairy theory and dismissed the claim.

Receiving Wireless.

By use of photography, a method invented by C. A. Hovle, an electrical engineer of Schenectady, wireless messages can be received and recorded at a far greater speed and with more accuracy than heretofore. The invention permits the eye either to supplement or replace the ear in reading wireless messages. The machine has reached a rate of 400 words a minute, and in test as many as 600 words. Up to this time the most rapid method of recording radio signals has been by phonograph, but this must still be transcribed, so to speak, by the ear and not the eye, and moreover no permanent visual record is made.

Harmful Dust in Factories.

The dust in various industrial establishments is found by Professor Winslow of Yale Medical school, to range from about one-twentieth of a grain of solid particles per 100 cubic feet of air in a good metal polishing shop to 12 grains in a textile factory. But while a carpet or blanket mill yields more dust than such industries as pottery, asbestos, tobacco and steel-grinding, little of it is inorganic matter, and it is the dust from abrasive materials that seems most harmful and to tend most to produce tuberculosis.

To Foil Auto Thieves.

To aid in the capture of automobile thieves a Los Angeles man has invented a clamp to be locked about a tire which makes a loud noise each time it strikes a pavement and leaves an easily followed trail.



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