

PHOTO CAPTION: Cover art from Blume's book illustrates the concept of a carbohydrate-based economy fueled by renewable energy sources like ethanol

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The Still Revolution

By Bill Moore

Part one of two part interview with 'Alcohol Can Be A Gas' author, consultant and organic farmer David Blume

For David Blume, in the classic 'Chicken 'n Egg' paradox of which came first, it's the internal combustion (IC) engine that came first, the fuel came later and that fuel was, by and large, alcohol, not gasoline.

In fact, Blume contends that the stuff we use almost universally today to power our motor vehicles was the waste by-product of the kerosene distillation business; the internal combustion engine had to be adapted to burn it. Alcohol was the original fuel that powered the IC engine into the 20th century.

Want proof? Blume points out in [Alcohol Can Be a Gas](#) that the original Model T included two overlooked and often misunderstood innovations: the spark gap adjuster on the steering column and the manual choke. Both were intended to help the driver adjust his fuel air mixture and spark timing so the engine could burn any blend of either alcohol or gasoline. Today, we rely on sophisticated microprocessor sensors and computers to do what the average Model T owner did manually.

It's interesting insights like this that make Blume's long-delayed opus to alcohol such an informative and

entertaining read.

Here's another. John D. Rockefeller funded the Women's Christian Temperance Union and their decades-long drive to outlaw alcohol to prevent it from competing with gasoline just as the nation began to clamor for the automobile at the end of World War One. The result was the 18th Amendment and the imposition of Prohibition. By the time Franklin Roosevelt repealed it twelve years later, Henry Ford had ceased using the spark gap control on his cars and the alcohol fuels industry was in shambles.

But beyond these curious and ultimately short-sighted footnotes of history, Blume makes a compelling case for a carbohydrate economy based on alcohol fuels made from numerous renewable sources and not just corn alone. In fact, the only sustainable way to achieve his goal is the wholesale adoption of a permaculture system that largely abandons the petroleum and natural gas dependent agribusiness system in place today where it takes as much as ten units of fossil fuels to produce one unit of food.

You can listen to part one of my interview with Blume by using either of the two MP3 players embedded in the page above or by downloading the file to your computer hard drive for transfer to and playback on your favorite MP3 device.

IN BRIEF: Synopsis of Part One of David Blume Interview

- Asked to make his best case for switching to alcohol fuels, Blume responded that first of all, its not a 'big deal' to switch from hydrocarbons (oil, coal, natural gas) to carbohydrates, which are essentially natural, complex sugars. Plants absorb carbon dioxide from the atmosphere, water from the soil and powered by photos from the Sun, create carbohydrates that we -- with the help of microbes -- can then convert into fuel. This process has been going on for millions of years and will continue to occur far longer than the one-time event of petroleum.
- He cautions that whatever we replace petroleum with must be better than what we are currently using or are likely to use if we take the wrong path, including carbon-based candidates like oil shale, tar sands, methane hydrates and coal-to-liquid. These fuels are, in fact, environmental disasters.
- Blume's perspective is that all of the hundreds of millions of IC engine vehicles on the roads of the world today are alcohol-burning engines that have been altered (adulterated?) to run on gasoline. He sees the move back to alcohol as returning to the original fuel for which the engine was designed.
- Unlike the complexity of refining gasoline -- once considered the 'waste' by-product of Rockefeller's kerosene and heating oil business -- which is highly variable and difficult to formulate into a consistent product, alcohol is a much more easily distilled and consistent product. We are paying, he argues, to get rid of the toxic waste of the petroleum industry when we buy gasoline.
- The process of plants creating carbohydrates and man using that to ferment alcohol fuels -- and other more beverage-like liquids -- is, in effect, a way to convert sunlight into fuel. Blume explains that when we burn ethanol, we release both the original carbon dioxide and water the plant absorbed. In effect, we are running our vehicles on stored "liquid sunshine" since the only thing not released back into the environment at the time of combustion are the original photons.
- Blume includes many pointed political cartoons in his nearly 600-page "bible" to help provide comic relief and to drive home the message of his book, that we can and must break the back of what he calls the "Oilygarchy" that controls our destiny. The book is, in fact, five books in one

and contains everything -- and I mean everything -- you need to know to make and use your own home-grown alcohol fuel.

Beyond the logic and economics of putting all the information on one volume, Blume stressed that alcohol needs to be understood as a complete system. Because energy is woven throughout the fabric of culture, you can't separate the fuels in our cars from the governments we have. If we expect agriculture to not only provide us with fuel, but also with energy, then we need to recognize its profound impact on our shared environment.

- Of all the alcohols available to us, only ethanol is non-toxic; all the others, including propanol (rubbing alcohol) and methanol, pose serious environmental concerns. Ethanol is also the easiest one for man to make because it involves relatively low tech processes.

Alcohol Can Be A Gas shows how to miniaturize the process to the point that a farmer or even a suburban land owner could set up his own distillery, which borrows heavily from conventional oil cracking technology.

- Pretty much everything we know about alcohol for the last 80 years has been manipulated by the American Petroleum Institute, Blume argues. Until the 1920s, it wasn't clear which fuel -- petroleum or alcohol -- would become the dominate fuel in America. Henry Ford not only gave his Model T the ability to use either fuel. He even developed a line of farm tractors that ran on farm-produced ethanol.

Where Ford understood the ecology of commerce -- "how can the farmer be our customer, if we're not his" -- Rockefeller couldn't care less and set out to eliminate the competition as he had ruthlessly done in building his Standard Oil empire. Under the guise of supporting the Temperance movement, which he funded to the tune of as much as \$4 million in 1915 dollars, he succeeded in getting his unwitting surrogates -- and bought-off Congressmen -- to lobby for and pass the 18th Amendment and then the Volstead Act outlawing not just the consumption of alcohol, but more importantly, its production.

- During the same period of time, the newly formed Agriculture Extension Service, which was originally funded by Rockefeller -- was forbidden to provide any technical assistance in the production of alcohol fuels on the farms of America
- Blume also notes that the Model A was the first truly "flexible fuel" vehicle because you could adjust the main needle jet from inside the passenger cabin, allowing the car to burn any mixture of alcohol and gasoline. It's taken us 80 years to get around to doing the same thing with computers in the new crop of flex-fuel vehicles.
- Blume's pet peeve with the media is that most reporters don't have the time to dig behind the propaganda that assails them in the form of oil industry-instigated press releases, studies and articles. He cites the example of the demand for corn causing the price of food to rise, especially for the poor in Mexico who depend on it as a staple of their diet. But he argues that if that were true, the available amount of grain should have gone down. In fact, it didn't. In order to meet the demand for corn to feed all the new ethanol plants, farmers needed to plant 11 million additional acres. They planted over 14 million acres. As you might expect, the price of corn paid farmers at the coop elevator has barely budged. Instead, its the speculators on the Chicago Board of Trade that make it appear that the price of corn has skyrocketed. It's these traders and and the narrow market of corn buyers dominated by ADM and Cargill that control the price of corn being exported to places like Mexico.

- The biggest "myth" about alcohol is that it takes more energy to make than you get out, Blume

asserts, arguing that the work of Cornell professor David Pimentel is the ethanol equivalent to global warming skeptics. His research is dated and based on faulty assumptions. When his first study appeared sometime around 1981, he was on the payroll of Mobil Oil, a fact that he didn't disclose at the time to the U.S. Department of Energy.

- The amount of water used in the ethanol distillation process is a legitimate area of concern, Blume acknowledges, but it is only a fraction of the water used in the extraction and processing of tar sands and oil shales.

Three-quarters of the water consumed in the ethanol process is used in the cooling towers where it is evaporated away. There are other ways to achieve the necessary cooling, but because evaporating is the cheapest, we will need a national policy that says preserving a water is of higher priority than saving a few pennies in making ethanol.

One strategy that would improve the energy balance is heat recovery where the excess waste heat is used in process.

However, put into perspective, the alternatives to alcohol -- oil shale and tar sands -- will permanently pollute up to 2,500 gallons of water for every gallon of synthetic fuel produced.

CONTINUED IN PART TWO

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