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## NEW PROCESS FOR MAKING OF GASOLINE

DOCTOR RITTMAN, HYDRO-CARBON CHEMIST OF BUREAU OF MINES, RESIGNS HIS POSITION DISCOVERED PROCESS.

(H. G. James in the Oil City Derrick)

Kansas City, April 22.—Dr. Walter F. Rittman, hydro-carbon chemist and engineer for the bureau of mines of the department of the interior, has resigned. Dr. Rittman is the man who discovered the much heralded process of cracking distillates and residuum and producing therefrom benzol and toluol for the manufacture of high explosives and larger quantities of gasoline than is now secured by straight-run distillation. It has been announced in the public press that Dr. Rittman will engage in the manufacture of gasoline in competition with refiners and that he proposes to reduce the price to the public 50 per cent. There is no foundation whatever for these statements. Dr. Rittman has made no such claims and has no purpose whatever of entering in the manufacture of gasoline, at least at the present time. The story that he will head the gasoline making enterprise of automobile manufacturers is groundless. In fact, up to the present time, Dr. Rittman has not completed the construction of or operated a single plant for the manufacture of gasoline. He has, however, amply proved his theory concerning treatment of petroleum. Dr. Rittman went with the government for the purpose of working out certain conceived theories that benzol and toluol for the manufacture of high explosives, for which this country had depended upon Germany before the war, could be made from petroleum products. He very soon proved his theory and a plant was constructed by the Aetna Explosives Co., at Pittsburg, Pa. The first plant, although expensive in construction and entirely new in design, has proved a pronounced success. Two or three other plants for the manufacture of benzol and toluol were erected with somewhat changed design and were in full operation within 24 hours after completion. Benzol at the present time is selling for about 90 cents and toluol for \$1.50 a gallon. As soon as these plants were completed and the theory demonstrated beyond peradventure of a doubt, Dr. Rittman and the department dropped this phase of the discovery and turned their attention to other matters. The government offered the Rittman process to the public to be used in the manufacture of gasoline, but oil men were reluctant to enter into what looked to them like an expensive experiment. They admitted all that Dr. Rittman had done, but were not satisfied that gasoline could be made in large quantities by a continuous process cheap enough to meet the situation. However, finally some eight or ten refiners, scattered over the country, secured licenses from the government to experiment with the Rittman process. Oil men approached Dr. Rittman practically with a demand that he guarantee his process. Dr. Rittman took the stand that he was not selling anything, that he simply had a theory which he believed was practical, and he offered it without cost to the public and with no guaranty whatever. He finally grew weary of the strife and decided to accept the proffer of \$1,500,000 from New York capitalists for the construction of a plant at Philadelphia for the manufacture of dyestuffs, for which this country has heretofore depended upon Germany. Contracts have already been let for the construction of buildings, and it is expected the company within three or four months will be engaged in this enterprise. Dr. Rittman chose the manufacture of dyestuffs in preference to anything else by his process for the reason that he feels this industry will be more stable than any other branch of the petroleum business. It is stated Dr. Rittman will own a very fair percentage of the capital stock of the company, which is turned over to him in exchange for

his patents, and he will receive a salary of \$25,000 a year. Dr. Rittman will also have for his own use the foreign patents of his process for the manufacture of both dyestuffs and benzol and toluol. It is stated by Dr. Rittman that, as a result of his discovery, that different sized molecules represent different products of petroleum, many new commodities will be made from petroleum.

### Plants Operating.

In this connection it will be of interest to the oil fraternity to know that the Island Petroleum company at Pittsburg, Pa., is operating its Rittman plant successfully in the manufacture of benzol and toluol. This plant was running within 24 hours after its completion. This plant is so constructed that when the war ceases and there is no longer a demand for benzol and toluol at high prices, it can be turned over without difficulty to the manufacture of gasoline. The plant cost about \$25,000, and within a few weeks had made enough benzol and toluol to pay for itself. Probably the only reason others have not embarked in this enterprise is the possibility of a sudden termination of the war. The Island Petroleum company is using distillate from its refinery. It can very readily make a 54.2 gravity motor fuel of high power propensity from distillates and heavy residuum. The Pittsburg Oil Refining company, at Coraopolis, Pa., is installing a Rittman process for the manufacture of gasoline and ought to be running within the next two or three weeks. The Germania Refining company at Oil City, Pa., has a Rittman process nearing completion. This company, before building a Rittman plant, put up a Rittman experimental still and proved out the theory, after which a license was secured from the government. The Midwest Refining company at Casper, Wyo., is putting in a Rittman process of an entirely different design than any other heretofore conceived. It is under the direction of Dr. David T. Day, for many years with the statistical bureau of the department of the interior. It will have an 18-inch tube and instead of having a carbon cage at the bottom will have an automatic trap, the carbon being blown out by force created in the operation of the process. Other Rittman plants are being installed under secrecy. The Constantin Refining company at Tulsa, Okla., will immediately begin the construction of a Rittman plant as will also the Indianola Refining company. The Island Petroleum company's plant at Pittsburg is considered the ideal Rittman plant up to this date. It uses, it is said, a 300 oil of 40 Baume. A fixed or non-condensable gas thrown off by the process furnishes more than sufficient fuel to operate the plant. A temperature of 1650 degrees Fahrenheit is maintained in the furnace and 1250 degrees Fahrenheit inside of the 19-inch tube. Air is forced in with a Sturdevant air blower, and the oil, before entering the tubes, is heated to 190 degrees Fahrenheit by passing through an ordinary Rudd water heater. Fourteen hundred gallons of crude a day passes through the tubes. From 80 to 90 per cent of synthetic crude is recovered from which nine per cent of benzol and 12 per cent of toluol are distilled. By this same process with lower temperature and less pressure a synthetic crude can be made which will produce 20 to 30 per cent gasoline, the first run, and by re-running what is left will produce a total of from 60 to 80 per cent gasoline, or what might more properly be termed a greaseless motor fuel of low end point and more heat properties than contained in straight-run gasoline. A ready market is being found for all of the refuse, such as tar, coke, carbon, etc., and at very satisfactory prices. It has been computed that 40 cubic feet of gas is all that is necessary for each gallon of oil to run through the tubes. It has been intimated that in spite of the fact that the department at Washington made a strenuous effort to safeguard the Rittman process for the use of the general public, the general public failed to appreciate its opportunity and the process is likely to be controlled by a few companies. The government provides in its licenses that any important or fundamental patent procured by the licensee shall be turned over to the government for the general use of the public but the license gives the widest possible opportunity to the licensee for protection in all the small and important details of installation, so that the chances are in a little while it

## New York Philharmonic Harp Is Most Expensive in America



C. Schuetze, harpist with the New York Philharmonic Orchestra.

While the origin of the harp is lost in the mists of ancient times, and it is known to have been used by the early Egyptians, and it is a matter of history that the harpists of the Celts were held in peculiar veneration and were given special distinction, the first record of the use of the harp in the orchestra occurs in the account of the "Ballet comique de la royaume," performed at the Chateau de Montiers on the occasion of the marriage of Mary of Lorraine with the Duc de Joyeuse, in 1581, when harps formed part of the concert de musique. "The use of the harp in modern times has almost disappeared," is the regret of one writer, "and were it not for the increasing use of it in the orchestra, the color of its tone having attracted the masters of instrumentation, so that the great scores of Meyerbeer and Gounod, of Berlioz, Liszt and Wagner are not complete without it, we should, perhaps, know little more of the harp than of the dulcimer, in spite of the efforts of distinguished virtuosi, whose devotion to that instrument maintains its technique on an equality with that of any other, even the most in public favor." The modern harp, together with its name, is derived from the nations of Northern Europe. A Latin writer, Venantius Fortunatus, describes it in the seventh century as an instrument of the barbarians—"Romanusque lyra, plaudat tibi barbarus harpa." This is believed to be the earliest mention of the name "harp" in literature. The word is derived from the Old High German "harapa," the Anglo-Saxon "hearpa" and the Old Norse "harpa." The instrument has been greatly developed in the last half century, and the concert harp used in the New York Philharmonic Orchestra, soon to be heard here, is one of the best in the world, being equipped with all the devices that enable the player to bring forth the tonal nuances of the score. It is one of the most expensive harps in America, and the value placed on it is well over \$1,000.

will be quite impossible for tardy refiners coming in to get the advantage of the real advancement made in the Rittman process. It has been said the Standard Oil company, as a result of recent improvements in the Rittman process, has discontinued work on one of its new Burton process plants. At the present time the Standard in its various refineries has 1,500 Burton stills in operation.

### Some Failures and Successes.

Another reliable bit of information is to the effect that the Gulf Pipe Line company's McAfee process has failed to make good. The first criticism of it, to the effect that it was not practical because of the cost of the ammonia catalyzer, has been sustained. It has been impossible to recover this costly catalyzer, and the Gulf company has given orders for a Rittman process plant of 50 tubes. This is the largest Rittman process plant provided for up to the present writing.

It might be stated in this connection that while Dr. Rittman is withdrawing from the department, and an engineer and chemist formerly with the Associated Oil company of California has come on to Washington to take his place, Dr. Rittman will still be accessible to the department and will give such assistance as is possible in the continued exploitation of his process.

It will be of interest to the fraternity to know that several other experiments recently made on other processes have proved failures. At the present time P. W. Wilkins, formerly with the Milliken Refining company, is putting in a cracking plant in connection with the Sapulpa Refining company. It is said to be a combination of Rittman, Snelling and other

processes and is expected to be in operation within a short time. Dr. Cross, of Kansas City, is now in Chicago completing arrangements for the installation of a Cross process plant with the Rosedale Refining company in Kansas City. Cross uses horizontal tubes, while Rittman uses an upright tube. Cross pursues the liquid process, while Rittman first reduces all of his crude to vapors. Yet both of these men have great respect for each other's views and ideas. Charles J. Greenstreet has merged the Cleveland Refining company at Cleveland, Okla., and the Seeger Refining company, at East St. Louis, Mo., into the Consolidated Oil Refining company, and is successfully making a greaseless naphtha by tubular process. He claims to get from Boynton crude 14 per cent of 60 gravity straight-run gasoline and about 65 per cent of greaseless naphtha by re-running through his coils the remaining kerosene distillates. This greaseless naphtha runs about 49 gravity, has an end point of 419 and initial of 80 to 110. This greaseless naphtha is crystal white, throws off a sweet odor, and ignites readily even in cold weather. Mr. Greenstreet says he has been making three tanks a day and has contracts for all he can possibly turn out. He is now putting in two new cracking units which will more than double his capacity.

The Avis Refining company is operating its Wells process plant at Jacksboro, Tex., on Sour Lake crude of 20 to 20.5 gravity and getting five per cent of the asphalt and 60 per cent lubricating oil, the remainder being used for fuel. About 200 barrels a day are now being treated and arrangements have been made for an additional 500-barrel still. It is stated

on reliable authority that Allen Leamy of the Wellsbach company is at the head of a new company to be known as the Middle West Oil company, which has acquired the old Wells process plant at Columbus, O., and in a few days will begin converting the same into a modern Wells process plant for the manufacture of gasoline. The new design for a Wells patent is entirely different than anything heretofore proposed for the manufacture of gasoline. First there is a furnace about two feet wide, two feet deep and nine feet long, over which is suspended a cracking box containing 100 tubes, 2 1/2 inches in diameter. The oil comes down in these tubes, is heated and cracked and carried to two domes, one at either end, for filtering the condensable gas. This size cracking box will handle about 100 barrels of crude a day. Pressure on the oil-feed lines does not exceed 15 pounds and pressure in the cracking box only a few ounces, or enough to overcome the weight of the lead. The temperature runs up to 1,000 degrees Fahrenheit. From the filter dome, which is filled with Fuller's earth, the product goes to the condenser. The cracking box tube consists of a large tube in the bottom of which is a quantity of liquid lead. The oil passes through a smaller tube to the bottom of this lead and is released so that it passes through the lead and by way of the tubes to the filtering domes. Distillate will be used in this plant and experiments have shown it possible to recover 80 per cent of synthetic crude from which can be distilled 40 per cent of 50 gravity gasoline. It is expected this plant will be completed within three months.

### CONVICT ROAD WORK, VS. THE OLD LEASE SYSTEM

Convict road work is developed in Georgia to a greater extent than in any other state. June 1, 1915, according to a report received by the national committee on prisons, Judge George T. Cann of Savannah, 2,962 felony and 3,185 misdemeanor convicts were employed on the roads.

The state prison commission has supervision over all felony and misdemeanor prisoners in Georgia. This centralized control is in advance of the method in vogue in most states of placing misdemeanant prisoners under county control. It makes possible the better development of any labor system, on roads, farms, or in manufacturing.

All male prisoners capable of road work and work upon drainage systems are pro rated out to the various counties which make requests for their pro rata, exclusive of boys under fifteen or infirm convicts. Any two or more counties may combine for the purpose of working and improving the roads of their respective counties with the approval and consent of the prison commission. A county has the right to deliver its quota of convicts to another county, the county receiving the convicts paying for their services by an exchange of convicts or work on the roads. No provision is made for payment between the counties in money.

When convicts are employed by any county, rigid regulations are enforced. The county must provide at its expense proper guards, clothing, bedding, buildings, medical supervision, etc. They are also required to furnish a specified diet fixed by the prison commission; for instance, a certain amount of fresh meat a specified number of times a week.

Judge Cann emphasizes the public economical advantage of employing convicts in building good roads as compared with the old lease system when private individuals were made rich from the convicts' labor. The value, he states, is now derived by the public in its public works, with the least competition with free labor and the greatest benefit to the convict.

The national committee on prisons congratulates Georgia on its excellent showing, but asks if some of the value were returned to the convict would it not lessen the cost of guards. Iowa has found it practical to pay wages to convicts working on the roads—so can Georgia.

As a result of the scarcity of dyes we may escape this year the double-dyed villain and the dyed-in-the-wool partisan.

Letting babies die for lack of proper care and nourishment is stupid if not criminal. Civilized communities ought to know and do better.

## PUPILS AND TEACHERS FROM OUT OF TOWN

MANY HAVE REGISTERED AT THE ARDMOREITE OFFICE — MORE COMING FOR TRACK EVENTS TOMORROW.

The following pupils and teachers who are in the city to attend the annual oratorical contest and track meet have registered at the Ardmoreite office.

The pupils are all representatives of their respective districts and their teachers are justly proud of their records in school work.

### Woodford.

Mrs. Dow Taylor, Paul Taylor, John Preston Taylor, Miss Pearl Stafford, Lester Clifton, Rhodolphia Thompson, John Clifton, Mrs. L. D. Akers, Mrs. Lina M. Robinson, Glen McGill, Springdale School.

W. H. Vaughn, James W. Vaughn, Verdy D. Vaughn, Mrs. E. F. Riser, Lily Riser, Mrs. Dr. Taylor, Preston and Paul Taylor, Alice Akers, Charley Akers, Lesley Ledbetter, A. M. Jackson, Leland Galt, Marguerette Salsbury, Tweed Jolly, Udell Jolly, Marietta.

L. D. Felts.

### Keller.

W. M. Jones, principal; Miss Myrtle Stufflebeam, assistant principal; L. W. Ligon, director; J. B. Ligon, Mrs. L. W. Ligon, Clara Ligon, Dovie Ligon, Roy Ligon, Othol Ligon, Mrs. W. P. Terrell, Frances Terrell, T. C. Terrell, Mrs. J. D. Coulter, Olen Coulter, Braz Staples, Cecil Staples, W. B. Staples, Ruth Ligon, Esther Ligon, W. P. Clowdus, Vada Clowdus, Eunice Clowdus, Vera Salyers.

### Graham.

J. R. Hutson, principal; Wiley Beck, Brown School District.

H. R. Jeffreys, principal; Otis Butler, Celeste Butler, L. Butler, Lula Gazzaway, Allie Gazzaway, Ben Gazzaway, William Gazzaway, Willis Dougherty, Bertie Dougherty, Bernice Dougherty.

### Provence.

Mrs. Minnie Loggans, Frank Avants, Jim Butler.

### Mary Niblack District.

E. A. Gilder, Irene Gosmeyer, Earline Gilder, Ralph Hudson, Wirt; Miss Lillian Ginn, Springdale school; W. C. McGill, Ardmore; Helen Carroll, Plainview; Goldie Killen, Plainview; Vera Carroll, Plainview; Doane Carroll, Plainview; Robert Fenley, Provence; J. W. Bales, Wirt; P. Foster, Wirt; Elby Bass, Wirt; Watson Barker, Wirt; David Craft, Wirt; Merle Brown, Niblack; Miss Vivian Crosthwaite, Niblack.

### Mulkey.

Alvin Barber, Cecil Carter, Alfred Barton, Ivy Barber, Max Pittman, Juanita Lindsey, Nell Thompson.

### Norris Chapel.

Birdie Newman, Kathleen Newman, Keller.

R. F. Beavers, Thelma Clowdus, Charles Beavers, Jurhee Clowdus, G. C. Veal, Oscar Kreiger, Beatrice Veal, Karl Kreiger, Clara Veal.

### Springdale.

Rowland Turner, Alvin Bartley, Marietta.

### Deese.

J. T. Spears, Roxie King, Florence Johnson, Ella Mayberry, Ernie Bridges, Jesse Hammett, Thad Johnson, Prof. Laird, S. E. N. Durant.

### Newport.

Alvin Bruce, Agnes Evans, Cecil Arnold, Lettie Mattox, Royse Arnold, Charley Arnold, Mrs. G. B. Wolf, Ballard Clowdus, Clara Lasley, Ruth Maddox, John Smith, Bettie Baker.

Birdie Turner, Springdale, A. A. Rogers, Wilson, Mrs. A. A. Rogers, Wilson, Mrs. Eva Clifton, Springer, Guy Williams, Springer, Mr. and Mrs. W. W. Miller, Myra Miller, Woodford, Provence.

Mrs. Georgia Scott, Miss Eunice Scott, Mrs. Minnie Loggans, Miss Amy Mitchell, Louise Mitchell, Norma Scott, Pinkie Bridges, Viola Jones, Beatrice Thornton, Maggie Harris, Fay Stanford, Maude Stanford, Christine Hagel, Robert Finley, Clara Mayfield, Aurora Thornton, Jack Avants, Jim Butler, Mr. and Mrs. A. L. Finley, Mrs. Hinton, Mrs. Hugh Jones, Miss Sue Mayfield.