# Democratic Matchman.

# Belletonte, Pa., October 26, 1917.

THAT ROAD WITHOUT A TURN.

Far beyond the Fairy Highway, Where truth and justice will not burn, We once more look with pleasure To that road without a turn.

We often view our shadows; And wonder what they mean, But, however fine the aspect, The image will be seen.

Each road has its limit; A thousand miles or more, Once trod upon your highway You'll pass this way no mo

The first few years of manhood; Are the first steps on the way, These few unwelcomed heart-aches

Will not last all the way. Then count your deeds of kindness; And debit them 'ere too late, If at all these glorious pleasures

Of the straight road you would appre You don't hear "stop and listen;"

For the world must onward roll, Wait and learn while yet approaching, And no one there shall ask for toll.

Then listen for advices: Take them all and never spurn Render each his duly portion, And begin a road without a turn. -By M. C. S.

### THE CASE AGAINST THE DEAN SMELTER.

"This is very good, John," Pro-fessor Hammond said, looking up from the carefully written-out record of the experiment his young assist-ant had been making. "By the way, what did you mean when you told Tompking they you were not going on Tompkins that you were not going on with your class next year?" For an instant John Darrow turn-

ed his face away. Then he crossed the laboratory to the alcove where the professor's desk stood. "It's the money, Professor Hammond," he said. "I must drop out for twelve months and earn the five hundred dollars I

will need for my Senior year." "You can earn some here. Better let me lend you the rest?" John shook his head. "Thank you,

but mother does not like the idea of my going into debt. She says-" He was interrupted by the opening

"There is a man outside, Professor Hammond, who asks to see you. He said to tell you his name is Ned Dean.

"Ned Dean? Why, I-O, I re-member! I used to know his brother in Boston. Show him in."

John went to his work at the table half-way down the room. He glanced up, to see that Dean was under middle age, alert, determined. His bus-iness suit was worn and his hair was ruffled over his head.

"Now I hope I am not interrupting you, Professor Hammond," Dean said as he shook the older man's hand. "You know you told me to call on you if I needed assistance. A State university, even if it is the State of California, seems like a strange place to come for help in trouble at a smelter,

The old professor's kindly face rew grave. "I see. John can do this grew grave. "I see. John can do this just as well as any man here. If it proves too much for him, I'll go down and take a look at the trees. You want him to get to work at once?" "Early tomorrow morning. Brunney intends to begin proceedings this afternoon, but I can stand them off a week if I have a Berkeley man investigating the matter."

The three men talked for an hour. Then John Darrow bade the others good-by and went hurrying across the campus. Me was obliged to make a hurried trip to San Francisco to prepare himself for his work. Already he was heartily alive to its pos-sibilities; there would be opportunities to test his efficiency in both of his favorite subjects. Then there would be something more—an oppor-tunity to combine scientific exactness with daring imagination.

When Dean reached the office of his reducer works the next morning, he ly it is handled, the greater the num-found John waiting for him. The ber present. As milk is an ideal food found John waiting for him. The young man was arrayed in a khaki suit and stout shoes. Over one shoulder was slung a knapsack containing a magnifying glass, a few simple chemicals, a lunch, and a flask of

smelter

water. "Now what do you want me to do to get you started?" Dean asked.

"O, I am started already and came to report that I was at work. Mr. Brunney has given me permission to visit his groves and gather all the leaves I need. He was polite, but positive that there was no reason for the blight save the gases from the Dean

Ned Dean frowned. "Well, I must leave it all to you. If I can do any-thing to help, let me know. It will not be very pleasant tramping round

mer, for last winter's rainfall was less than half the usual amount, and the year before was a dry one. Good-by, Mr. Dean. As soon as I have any-

thing to report, you shall hear from He strode off down the beach. Westward stretched the bay, its tran-quil blue surface flooded with sun-not affect the milk in the same way shine. Off to the north was a waste as they differ in the kind and amount of sand dunes, with here and there a of acid produced and in other changes,

clump of scrub oaks, misshapen and twisted by wind. East and south wooded hills rose. They were burned brown by the fierceness of the sun and powdered with dust.

John drew a long breath. "It's a He was interrupted by the opening of the door. A boy looked in to say: """ that is what I mean it to be. I'll Some authorities describe the comwin!' For four days John never left that

region, save to sleep during the hours of darkness. Then he made a hurried trip to Berkeley. There he found that Professor Hammond had been sum-

funeral of an old friend. he threw back his head a little defi-antly. "No, I'll not do it. If I am on the right track, the books and rec-



## THE EFFECT OF BACTERIA UPON MILK.

To avoid the evil influence of bacteria have been designed all the methods of caring for the dairy and barn, all the methods of distributing milk in ice cars. Moreover, all the special devices connected with the great industry of milk supply have for their foundation the attempt to avoid, in the first place, the presence of too great a num-ber of bacteria, and, in the second place, the growth of these bacteria. H. W. CONN.

Late Bacteriologist of the Connecticut State Board of Health.

#### OTHER FERMENTATIONS.

Although milk allowed to stand ordinarily turns sour from the formation of lactic acid, other fermentations are exceptionally produced. The formation of butyric acid in milk which may be recognized by the "ran-cid butter" odor not infrequently

found in old, sour milk was thought for a long time to be a continuation of the lactic fermentation, but is now known to be caused by a number of different but closely related anaeroconditions for growth in the absence of dissolved oxygen in the milk which

is consumed by the sour-milk bacteria. Most of the butyric class of bacteria are spore-bearing and hence they are frequently present in boiled or pasteurized milk.

known as "sweet curdling." The coseparates from the curd producing a garbage supply, the average annual "wheyed off" condition. The curd yield was 22,000 tons. may be gradually dissolved due to the digestion or peptonization of the casein by proteid-dissolving enzymes that are prodouced by the bacteria. Alcoholic Fermentations.-Although glucose or cane-sugar solutions are extremely prone to undergo alcoholic fermentation, in milk it is less usual than either the lactic or butyric fermentations. The manufacture of certain alcoholic beverages is dependent upon the artificial production of this form of milk fermentation. Kouproduced by the addition of cane straight garbage diet does not prosugar and yeast to ordinary cow's old Koumiss being added to fresh milk as a starter. It is used with success in gastric troubles. Kephir,

-that start the fermentation. "Diseases" of Milk. - Abnormal changes, sometimes called "diseases" of milk, are produced by the presence

#### Hogs Solve the Garbage Problem.

The prevailing system of garbage disposal in American cities is that of incineration. This puts a burden upnuisance, while in Denver it is the ba- to reduce the danger of sun scald. sis of a new public-utility. corpora-tion. Since utilization of waste food has become a matter of utmost importance in America, of timely interest is the comprehensive article on this civic enterprise in the November issue of the Popular Mechanics Magazine.

The city of Denver, with its 250,000 inhabitants has paid nothing for the collection and disposal of its garbage for ten years, neither as a municipality, nor as individual citizens. The garbage question there is the least troublesome of all the health-department problems.

The contract between the city and the hog-ranch corporation runs in four-year periods. For a considera-tion, \$1, the Denver hog ranch is given the privilege of hauling away the city's garbage. The company's bic bacteria. These find favorable equipment for this work consists of 35 steel tank wagons, each of 600gal. capacity.

City ordinances require every home owner to provide a covered, galvan-ized iron garbage can; to keep this can clean; to throw into it only edible garbage. A garbage collector Not infrequently milk curdles in a who finds paper, glass, or other for-weakly acid or neutral condition, eign substances in the cans reports the matter to city authorities and the resident is compelled to dispose of agulation of the milk is caused by the action of enzymes of a rennet type that are formed by the growth of va-rious species of bacteria. The whey

In addition to regular government inspection at the packing houses, the state veterinarian inspects the ranch and its stock about once a week. The hog-ranch corporation is a highly specialized organization. The aver-age number of hogs maintained is 5.000.

As soon as they will eat, the young pigs have garbage fed them, and this continues to be the basis of their di-til they reach the market size. Ber. Parsnips and salsify are quite hardy and may be left in the row in the garden and dug the following spring, or stored like other roots. The tens of beets should be cut to yards, where they remain until eight miss, a well-known drink originally or ten weeks old, the young pigs have ting causes bleeding and a loss of col-made by Tartars from mare's milk is alfalfa added to their diet, for a or. Other rooots should be topped duce as valuable pork as does a balmilk; often just a small quantity of old Koumiss being added to fresh milk as a starter. It is used with suc-The ranch has 1,300 acres of alfalfa long as may be necessary, provides a field under lease, from which an am- good pit, according to J. R. Bechtel, is ple supply is derived.

When weaned the young pigs are immunized for life from hog cholera. A veterinarian injects cholera virus and cholera serum at the same time. Following this treatment the pigs go into the fattening pens, being graded and regraded once or twice a month, and promoted according to weight. Shoats, upon reaching a weight of 150 pounds, are sent to the finishing

## FARM NOTES.

-Where trees are planted in the fall, the roots should be exposed as little as possible to sun and air; the on the taxpayer or home owner ac-cording to the system of cost distri-bution, and at the same time results be set slightly deeper than they stood health departments in a majority of American cities prove that garbage disposal is regarded as an unsolved problem. In such cities, garbage is a ed somewhat toward the southwest

> -Numerous examples might be cited to show the influence of a purebred sire in grading a herd.

> At The Pennsylvania State College a herd composed largely of grade cows originally, just such as the average dairy farmer possesses, contained a few purebred animals. All the heifer calves, good, bad and indifferent, were raised and added to the herd. The object of the experiment was to determine the value of the purebred bull in increasing the average production of the herd when culling was not practiced.

The results are as follows:

The average yearly yield of butter-fat per cow for the first five years was 225.7 pounds; for the second five years, 243.4 pounds; and for the third five years, 266.9 pounds. These figures show an average yearly increase of 41.2 pounds for every cow in the herd during the third period as com-pared with the first. This increase was evidently due largely to the influence of the purebred sires, since no culling or selection was practiced. In investigations in Illinois, Hoard's

Dairyman found that dairymen who were grading up their herds with purebred sires were receiving over \$20 higher returns per cow annually than those practicing no grading. Surveys in Tompkins county, N. Y.,

developed the fact that dairymen with purebred sires were clearing on the average \$1,012 annually, after paying all expenses and deducting five per cent. interest on capital invested, as against \$395 per year cleared by dairymen with great sires.

-Root crops such as beets, carrots and turnips, can be very successful-ly and economically stored for the winter in outdoor pits. They will endure frost but should be harvested before freezing weather occurs, which in many part of Pennsylvania is usually the early part of Novem-ber. Parsnips and salsify are quite

within an inch of the root. Close cutclose to the crown.

The pit must be located in a well of The Pennsylvania State School Agriculture.

Sometimes the pit is lined with straw or leaves. As soon as roots are dug they should be topped immediately, placed in the pit in a conical or inverted V-shaped pile and covered with heavy paper, leaves, or better, with straw.

Roots go through a sweating or eating nr storage, during which time ventilaet. Attendants select brood stock at tion is absolutely necessary. For this this time, and these animals never re- reason the top or apex of the pile cold, frosty nights old carpet, bags, or similar material may be spread over the top for protection. After sufficient time has been allowed for the escape of heat and when severe freezing weather arrives, successive layers of soil each several inches deep should be added to the pile until it is covered to the depth of a foot.

tiply with great rapidity producing changes in the milk commonly called fermentations. SOURING OF MILK. The most universal and familiar change effected in milk is its souring due to the action of certain of the

milk bacteria upon the milk sugar (lactose) converting it into lactic acid. The acidity begins to be evident to the taste when it reaches about 0.3 per cent. calculated as lactic acid. As the formation of acid goes on, the casein is precipitated and curdling of the milk occurs. After a certain amount of acid is

here, because it is so dusty. I'd be mighty glad to see rain." "Rains rarely come before Novem-ber. It is unusually dry this sum-If a carbonate, as soda, is added to the milk to neutralize the acid, growth of the bacteria will be continued.

The formation of lactic acid is a characteristic possessed by a large number of bacteria. Although many different species are known to have so that the resultant soured milk is quite variable. In spite of this variety, however, bacteriologists are now agreed that a few species-perhaps one or two-are commonly responsi-Some authorities describe the common lactic bacteria as a single species, a small rod, to which the name Bacillus acidi lactici is given. Others divide them into two groups. One of these comprises gas-forming bacilli moned to Sacramento to attend the of the Bacillus lactis aerogenes type and closely related to the colon

"I believe I'll talk it over with bacillus commonly found in the intes-Mapes," John said to himself. Then tinal tract. Wherever carelessness another alcoholic beverage prevails in the matter of cleanliness, made by the inhabitants of the Cauthese gas-producing forms are apt to casus from the milk of cows, goats, ords here will give me all the assist-ance I need. If I am wrong, then I must take another start. I must win, both for the Dean's sake and for the en. It is very abundant in naturally that start the fermentation. honor of Berkeley, to say nothing of the five hundred dollars that will see In the meantime Dean was hard in milk at all stages of handling. There is no scientific foundation for day, the fifth day of John's investiga- the belief that thunder storms cause occasionally find ther way into milk tion, when, as he was crossing the milk to sour prematurely. It is ex- from uncleanly surroundings. Somedunes not far from the smelter, Dean plained by the fact that atmospheric times the milk will turn blue, acquir-isined him and the smelter, Dean plained by the fact that atmospheric times the milk will turn blue, acquir-times the milk will turn blue, acquir-times the milk will turn blue, acquir-times the milk will turn blue, acquir-"Found anything yet?" he demand- der storm are such as permit of a rapid growth of bacteria. Sterile which changes are caused by the presmilks are never affected by the action ence of various chromogenic or colorof electric storms.

It has been shown how bacteria get into milk and that the more carelessber present. As milk is an ideal food they begin at once to grow and mul-

but I know you do some wonderful things here at Berkeley."

A smile looked out from the profes-sor's deepest eyes. "Thank you, Dean. We do do some surprising things here, especially in our labora-tory work. Tell me your trouble. You own and run a gold smelter on San Francisco Bay?"

"Yes. It is small, but there is a big chance for the business to grow. In time I hope to get forehanded enough to install machinery for reducing other ore. You see north of me it's all sand dunes, but south a man by the name of Brunney has been experimenting for several years with trees and shrubs. He has a sort of nursery. Now he is trying to have my smelter declared a nuisance and put out of business."

"How's that?" Professor Hammond asked.

Dean's voice was heavy and he had spoken with so much force that John Darrow looked up from his work to hear the rest of the story. Bringing his fist down on the professor's desk, Ned Dean went on:

"Why, Brunney says the fumes from the smelter are injurious to his trees and shrubs. There is no use denying that they are losing their foliage, but I know there is not enough toxic in the smelter fumes to do any damage. You see, I have taken every possible precaution to have the gases rendered innocuous."

'What, in your opinion does cause the trouble with your neighbor's trees? And what is the trouble? Are they dying or simply losing their foliage

Ned Dean leaned forward. "I like the way you take hold of a subject. The trees look as if they were blasted; the foliage is dropping as bad as it would back east after a sharp frost. Now, Professor Hammond, if you will send a man down to look the land over, I'll pay his expenses. If he can prove that my smelter has nothing to do with the Brunney's trees, I'll give him five hundred dollars."

For a moment Professor Hammond sat lost in thought. There was not yet enough data in his possession for him to form any opinion regarding the trees. Dean moved uneasily in his chair, and the other man roused himself to say: "I'll be glad to have one of our men look into it for you, Dean. During our summer vacation we have only a few here, but the fall term opens-

"Please, Professor Hammond, I this,' the alcove where the two men were had to make experiments showing seated.

"Why, that would be the very thing! He finished his Junior year here in out would be taken as evidence by June. For a month now he has been any court after having been approv-

"But isn't he too young? I don't suppose you would want to put one of your big guns on the job, but—well, if I'm shut down, it means ruin for me." Us in the air. This is because the young foliage is softer, more watery. Now, Mr. Brunney, it is the old leaves that have fallen from your trees. "I reckon that's so. Why do they foul." I say, John, you will make a some day." John's face flushed with pride. It was not the money, or even the guar-"But isn't he too young? I don't fall?

pressed by Brunney. It was Wednes-

ed, a little sharply. "Nothing positive, but I've an idea,

somewhat unusual one, and I—" Dean interrupted him: "Now I begin to be afraid that your ideas are so unusual that they will never come to be facts. If I cannot prove that Brunney's ideas are all nonsense, I'll not be allowed to start this business next Monday. You better get busy.' "That is just what I am doing,'

and John hurried away before Dean could speak again. Friday evening Ned Dean was summoned to the telephone. It was John's

voice that said: "Please meet me at Professor Ham-mond's office at nine o'clock tomor-

row morning." "Have you solved the problem?" "I think so, but I would rather not explain until I see you. My explanatrouble.

tion must be verified by the records 've made in order to be understood. Ned Dean was on hand promptly. On entering the office he was surprised to find a half dozen men present. There was Tom Brunney, the lawyer employed by him, and the one employed by Dean, Professor Hammond, and two strangers. These last were introduced as Berkeley professors, men whose work was along the line of John's investigations.

"Well, am I to go on with my work?" Dean demanded. "I do not care so much how I go on, if only I do it.

"Now that is hardly fair to me or to Mr. Brunney," John declared. 'Please be seated, Mr. Dean, and let

me tell my story in my own way." Dean sank into a chair. John look ed round at the circle of eager-faced men. His wholesome color had faded a little and his eyes gleamed. How would his audience take what he had to sav

"First let me announce that the gases from the Dean smelter have no evil effect upon vegetation."

"We will have to have something more than your word for that, young man," Mr. Brunney snapped. "That's what Dean has declared all the time but it has not stopped the blight that is killing my trees."

"I have proof for you. In order to show that the gas did not hurt the fowish you would let me investigate liage, I saw that I must find out what John cried, walking forward to did. It took me some time. Then I

strong enough to injure vegetation. Dean, this is John Darrow. These statements that I have written

If the dairyman will use care in and around the barn and dairy and then apply low temperature to the milk he need never be disturbed by any of these infectious troubles.

Bacteriologists have been able to Occasionally milk becomes so slimy ( that it can be drawn into long threads. | trace the connection of all these in-This often proves a costly and trou- fections with the growth of unusual hacteria in the milk and thorough disblesome infection to the dairyman for it sometimes persists in spite of all infection of the utensils and premisattempts made to remedy it. Failure es is usually sufficient to stamp them to properly sterilize cans, and parout

So far as concerns the milk proticularly strainer cloths, is frequently responsible for continuance of the ducer and milk consumer, bacteria are from beginning to end a source of

Bitter milk may be ascribed to a trouble and to avoid them as much as variety of causes. A number of possible should be the desire not only of the producer but of every one who plants, when consumed by animals, possess the property of affecting has anything to do with milk as milk. will give the government an additionmilk. At certain stages in lactation, The avoidance of bacteria is only a noted that is peculiar to individual of keeping it at low temperature. youths while obliged to register upon animals. There are a number of spe-While it is true that the souring baccies of bacteria capable of imparting teria appear to be so universally disa bitter taste to milk and its products, tributed that they cannot be avoided although little is known of the chem- by any ordinary means, their number ical nature of the substances con- can be greatly reduced by care and cerned. Milk that has been cooked their growth prevented by iceing. All boys who have attained the age of 21 is likely to develop a bitter taste. other troublesome bacteria are within This is explained by the presence of control as they are from avoidable also have been called.

destroyed by the heat.

Pure sweet milk is only a question of sufficient care. But care means labour and expense. As long as we demand cheap milk, so long will we be supplied with milk procured under conditions of filth. But when we learn that cheap milk is poor milk, and when we are willing to pay a little more for it, then only may we expect the use of greater care in the handling of the milk, resulting in a purer product. H. W. CONN.

#### Nov. 9 .- "The Relation of Disease Bacteria to Milk."

"Because of the drought. You lege course, that moved him the most. know how far below normal the rain- He had won, and college professors, fall has been for two years. I have men who had excelled in his own made experiments of my own, to chosen field, were rejoicing with him.

show the effect of the withdrawal of moisture, but I do not ask you to ac cept the record of them as proof, for the college has dozens of such recwhat effects gases did produce when ords, made over a term of several time and sat through the performyears, proving that in time of drought ance as primly as if at church. it is the old leaves that fall first.' It took the united efforts of Proasked the little lady later. fessor Hammond and his colleagues

helping me with some experiments. ed by experts. Authorities declare to convince Brunney. Ned Dean held John is specializing in botany and that it is always the young leaves out his hand. "You're a brick. I'll out his hand. "You're a brick. I'll write that check before I leave this ous in the air. This is because the room. I say, John, you will make a

She-I like a man of few words and many actions. was not the money, or even the guar-He-You want my brother; he has antee of the completion of his col- St. Vitus dance .- Tiger.

of unusual species of bacteria which pens, where corn is added to their di-

#### Men from 18 to 40 Proposed for Draft.

Oct. 25.—Congress Washington, will be asked immediately on reconvening to include men from 18 to 40 in the draft. Amendments to the present law are already in prepara-

The amendments will be introduced by Representative Julius Kahn, Republican, of California, ranking member of the House Military committee. Representative Kahn is the father of the present draft act.

Army officials are assuming that this is to be no short war, and every man who would not be more useful at home is needed to bear arms. Speakers soon will start a campaign, it is hinted, to bring these facts home to the people.

The amendments will provide that every man between 18 and 21 and 31 and 40 shall be registered for military service. It is estimated that this al 12,000,000 men to draw upon. The a little salty taste is occasionally matter of care in handling milk and amendments provide, however, that attaining the age of 18, shall not be called to the colors until they are 21. Provision also is made that no man

of more than 31 shall be called to the colors until all the present draft from 21 to 31-is used up, and the since the June 5 registration shall

Representative Kahn's plan would give America a reserve of 19,000,000 men to draw upon-all between 18 and 40.

#### How to Address Letters to Soldiers in Europe.

Making certain that letters will reach American soldiers now in active service in Europe is an easy matter if letter-writers will follow a few simple instructions, advises the Pennsylvania committee of Public Safety.

There is a standard form of address for all men in the army service abroad and this is how the War Department wants all letters addressed (substituting the correct name, company and regimental or other designation in place of the one used here:)

John Smith Co. K, 18th Infantry,

No other address is allowable. Be careful to set down the name, Company initial and regimental number plainly and correctly. Then attach a United States two-cent stamp for and followed by a six inch layer of "Why, the clowns," she explained. "I could hardly keep from laughing at them."—Everybody's Magazine. each ounce or fraction of an ounce. earth. Foreign stamps must not be used.

In the upper left corner of the envelope place your own name and ad-dress. In other respects the mail dress. will be handled subject to the same regulations that control mail service in the United States.

-The average yield per acre, of potatoes for the past ten years, in Pennsylvania is only about 85 bushels. This is due to several factors, according to authorities of The Pennsylvania State College, one of which s the common practice of planting tubers from unselected stock.

If the farmer at digging time will select his seed for next year's planting from the healthy and most prolifc hills and store the seed in a cool. dry place, preferably apart from the common stock, he will find that such selected seed will often double his yield. Do not fail to select tubers from hills which are free of scab or any form of rot. By this precaution much disease will be eliminated from the next season's crop.

Potatoes keep best if stored at a temperature of 33-36 F., but very well also at a temperature of 40 degrees or even a little higher, according to the authorities of The Pennsylvania State College.

Ideal conditions for potatoes are seldom attained where cellars of dwelling houses are used for storage places, but such cellars may often be made satisfactory. A cellar room in which there is a furnace is too warm for potatoes. When there is heat in any part of the cellar, the storage room should be separated from the rest of the house by brick, concrete or double wall of tongued and groov-

ed boards having a dead air space. Such storage room should have at least one window by which ventilation can be arranged. The floor should be of earth rather than concrete or wood. It is important that light be excluded from stored potatoes, for even diffused light tends to turn the tubers green and to injure them from table use.

When conditions are not suitable for cellar storage, it is often advisable to store in pits those intended for late winter and spring use. Only a well-drained site should be chosen for a pit. An excavation five or six American Expeditionary Forces. inches deep should be made and this ther address is allowable. Be cavity lined with straw, hay or leaves. The potatoes should be piled on this material in a compact heap, then cov-

> After the earth has frozen somewhat another layer of straw and a second layer of earth should be added. The layer of earth should be eight or ten inches deep. Water should be drained away from the pit by means of shallow ditches.

-Classmate.

Trying on Her Risibles.

Louella saw the circus for the first

"What was the matter?" her uncle

A Man of Action.

spore-bearing bacteria which are not sources-filth on the cow, a dirty barn or uncleanliness about the dairy.

come red or occasionally yellow, producing bacteria.

tion.

ing a sky-blue color, or it may be-