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The Golden Age

Volume I

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Number 12

Conductors and Engineers Not Overpaid

OCCASIONALLY an item from some alleged financial "authority" steers us for a time in the wrong direction, but not for long, we think; for we have a lot of sharp-eyed, friendly, interested readers, who no longer believe everything they see in print and will have nothing less than the truth on all subjects. The story that engineers and freight conductors were making high wages was widely published, and was manifestly unfair unless accompanied by the fact that it represented nearly two months' work done in one month. We received no thanks from Wall Street for publishing their lies and now they will probably be sore at us for giving wide publicity to the truth. But we think our readers prefer to have us try to tell the truth at all times, rather than to follow a too common newspaper custom of telling lies and never correcting anything. The man who edits a magazine of this sort will inevitably make lots of mistakes. Shall we cover up these mistakes or "face the music"? What do you say?

Conductors' Wages

A FREIGHT conductor in Mississippi writes: "We are considered as having one of the best contracts in the country in the way of working conditions, and I presume you know the rates of pay are about uniform throughout the country in the same classes of service; I know of but one man on the Mobile Division of the Mobile and Ohio Railroad who makes the amount stated in your article, and this man has been in the service since 1874.

"For more than eleven years I have served in the capacity of local or way freight conductor, and during that time my increase in wages has by no means kept pace with the ever-climbing cost of living. I have had an increase of \$1.32 per day since 1914; or, to be exact, for a month of twenty-six working days of eight hours

each I receive \$151.32. Do you think that an excessive amount for a man who tries to be honest and who has a wife, three children and a widowed aunt to support?

"I have used the same winter suit for three winters, buying a new one this Fall only from dire necessity, and I owe the tailor a balance of \$20 on it. My wife made over a dress she had in 1917, and waited until the season was more than half gone before she bought her hat and cloak; in other words she waited for the 'sale prices'. We have not had an egg on our table since we had visitors, just three months ago, by actual count. We own our own home; and I do not know how those get along who pay rent and have large families to support.

"Are you going to call men robbers and highwaymen because they want enough to maintain their loved ones in some degree of comfort and see that they get proper food? It may be true that the heads of the four brotherhoods did hold Congress up at the point of a gun, in a manner; but they were forced to do this by the men in the ranks. All were ready to bring the wheels of transportation to a standstill if demands were not granted.

"I have given the best part of my life to this work; I don't know anything else; and I suspect I would have a harder time making a living at some other trade than railroading, and there are thousands upon thousands in the same boat. But do you think it just and right that these men, who are necessary to our national well being, should be denied the right to a living wage because some few among them wear silk shirts? I have been in the service seventeen years, and during all that time I have never had a silk shirt.

"You spoke of some of these men as making almost as much money as the governors of some of our states. Well, why shouldn't they? The governors of all the states might form a conspiracy with that wonderful law-making body in Washington and all quit; but somehow the country would rock along and people would not miss them very much except at tax-paying time. But you let the transportation men cease to function and see how long it would be until things would be in an uproar.

"Did you ever stand behind an engineer and watch him as he bored his way through the blackness of the night at a rate of sixty miles per hour or more, and note with what keen interest he watches everything? He knows that one mistake on his part or the failure of some fellow employe to bring up his end of the rope properly means death, not only to himself, but to lives entrusted to his care. This is a great strain which no man can endure for long without a telling effect.

"Or did you ever watch the 'fire boy' as he climbs to his post in the engine deck and, with scoop and sometimes with a dirty tank of coal, fights that roaring furnace from one end of the road to the other? He is eager that proper steam pressure be maintained and his train reach destination on time.

"Possibly you have never been an eyewitness to these things, but no doubt you have lain comfortably asleep in the Pullman while all kinds of hardships were being endured by the men in charge of this train; and you felt perfectly safe, for you knew the company required men who had to measure up to a high standard.

"These men are not criminals; but taken as a whole they are honest, hard working and charitable. They welcome publicity and would be only too glad if you would obtain the real facts and give them to your readers. I know of no class of men who will welcome the oncoming Golden Age with more real joy than the rank and file of railroad men.

"Very few people know or realize what a hard and trying life these men are forced to lead. Called out at all hours of the day and night, and exposed to all kinds of weather, is it any wonder that such a life does not appeal to the class of men who seek the governorship of our states? Then why deny these men a living wage?"

A passenger conductor in Iowa writes:

"You say that freight and passenger conductors now receive \$300 per month, when the fact is that the salary of all passenger conductors is \$180 per month. We grant that in very many cases conductors do receive as much as \$200 per month, and that some do even receive as much as \$300, but these are few in number; for in order to make extra wages one must have a long run and work long hours.

"Passenger conductors get only 75 cents per hour for overtime and that is only on straight time and not time and a half, as is figured in the case of men in the slow freight service and in the shops. The shop men get all the way from 75 cents to 87 cents per hour and are not compelled to be away from home a greater part of their time, as are the train and engine men; therefore their expenses are far less, and when the truth is known there is not so much difference in the net pay received each month by the two classes. Yard men, as well as track men and laborers, all get time and a half for all over eight hours. It costs the road man anywhere from \$40 to \$55 for board and bed away from home each month."

A Massachusetts conductor says:

"I find you are misinformed as to the wages of a conductor. You say they receive \$300 per month. The fact is they receive \$180, and work every day in the month including Sundays, ten hours a day, to receive that guaranteed sum. This is the actual wage scale here in Massachusetts. If there are any exceptional cases receiving \$300 it must be for overtime. Many of the conductors, myself included, have had to be away from home the last ten months at an added expense of \$10 per week for room and board in order to hold my job and rating."

A conductor in Maryland writes:

"Freight conductors here are making \$167.40, and passenger conductors \$186, for a thirty-one-day month. By losing a lot of sleep and making lots of overtime we can sometimes make near \$200. The freight conductors were receiving \$4.10 per day in 1912 and today they receive \$5.40. Figure the cost of living in 1912 by the side of the cost of living today and see if you think we have made a Jesse James hold-up. If we made as big a mistake in a train order as you made in your statement I think we would lose our jobs and have to go to digging potatoes or some other business. If we could earn \$250 per month we would think we were making big wages."

Engineers' Wages

A ENGINEER in the state of Washington writes the following:

"Myself and crew made twenty-five days from January 1st to 15th, 1920: the conductor's wages, at \$5.40 per day, equals \$135 for two weeks' work. Each trip I was at home eight hours and away thirty-six to forty-eight hours. Had I worked eight hours per day for the thirteen working days in the first half of January I would have made \$73.20. How many editors, governors and other professional men have got the nerve to work ten days overtime out of fifteen? It looks good on paper; but come out and gallop with us for a few months."

A subscriber writes of an Alabama engineer:

"He maintains that four or five years ago he received \$5.00 per hundred miles in his grade of service, and that now he receives only \$5.60 for the same service: and on the other hand the members of the unskilled unions, 'car toads', as he called them, were then getting 22 cents to 30 cents per hour and are now receiving 82 cents per hour; and, furthermore, that an engineer who is called out to do three hours' work gets pay for three hours only, while in the case of the lowest classes of labor they get a full day's pay for a like three hours of actual work."

The same subscriber writes of an engineer's wife:

"She says that the highest her husband ever knew a freight engineer to get was less than \$300 per month. She also says that her husband's expense on the road

is more than his home expense, for the reason that he has to have a room at two different places, and those who rent rooms charge railroad men more than they do others; and in addition to this disadvantage, she says, the local merchants charge members of the four big brotherhoods about five cents a pound more for the things they buy than they do others. She cited her own home as an evidence that the engineers were not living like lords, nor their wives enjoying the articles of luxury mentioned. Her rooms were small and plainly furnished. There was no appearance of wealth in either of these engineers' homes."

An engineer in Wyoming writes:

"I am a locomotive engineer on the highest rate of pay engines in the country in freight service. Employees in road service are not paid a monthly salary, but for actual service rendered; i. e., miles run or hours put in in actual service. The rate of pay is the same for Sundays and holidays as it is for weekdays; it is the same for the midnight hours as for the sunny hours in the day. This highest rate for locomotive running in the freight service is \$8 per 100 miles or eight hours of work. Now, holding railroad men down to the hours of work of other mortals six days a week would be \$48, or \$200 per month, which I venture to suggest is about the average for locomotive freight engineers in regular service."

A railroad telegrapher in New York state writes:

"The statement that freight and passenger conductors now receive over \$300 per month and freight engineers receive \$392 per month I believe is quite misleading and does these men an injury; for there are, to the best of my knowledge, only a few of such positions, and with present rates no engineer nor conductor can make this amount unless he works every day, including Sundays, and also nearly sixteen hours per day, which is equal to nearly two months' work in one month, from the popular standpoint of an eight-hour day.

"I am reliably informed that the only position drawing anywhere near your figure is one held by the oldest engineer on the road, and he has made as high as \$326 in a month; but this man works twelve and one-half hours per day, thirty-one days a month, to earn this, but cannot always do this because it is too steady and rest is needed. Therefore, he must needs lay off occasionally.

"At twelve and one-half hours per day this man is working four and one-half hours each day in excess of a day's work of eight hours; and if we figure this on an eight-hour basis, with time and a half for overtime, he is earning less than 75 cents per hour for one of the most responsible positions in the country, from the standpoint of the human lives depending upon him.

"As to the average freight engineer, I am reliably informed that he rarely exceeds \$225 for a thirty-one-day

month. In fact, unless he makes overtime he positively cannot exceed \$225, and there are many who make less than \$175 for a thirty-one-day month.

"The average freight conductor's pay on this road will not exceed \$200 per month, and he must work thirty-one days per month to earn this. The only instances where the figures as given herein are exceeded is where a goodly amount of overtime is made."

Shopmen's Wages

IT IS claimed that at the time the railroad shopmen, last summer, put in their request to have their wages of 57 cents, 63 cents and 68 cents per hour raised to 85 cents per hour their average individual wages amounted to \$1722 per year; but at forty-eight hours per week this amount would give 69 cents per hour, so it must have included some overtime. The wages of gang foremen before the last raise were said to be \$2461 per year, and the wages of helpers, \$1263. An increase of \$250,000,000 was divided among the shopmen in 1918, and a further increase of \$45,000,000 in 1919, the latter increase to put the shopmen on the same basis of a day's pay for eight hours' work previously granted to other railway employees.

Prodigious Plunderers

THE principal cause for undue profits on food and other stuffs has even been stated to be the fact that the people are willing for those profits to be made. This is only a part truth; for the average person is not possessed of the time and means necessary to conduct investigations and prosecutions. To secure any kind of satisfaction would take as much money standing as the profiteers have; and if the average person had the financial and social standing which the profiteers enjoy, or are supposed to enjoy, that person would not be an average person any more, but would be a profiteer himself and interested in furthering and protecting the profiteers' interests.

Accordingly, as a thoroughly reputable American document has stated it, "experience hath shown that mankind are more disposed to suffer while faults are sufferable, than to right these by abolishing the forms to which they are accustomed". Can it be that instead of memory clinging tenderly to the little red school-house, the little grey home, the old swimmin' hole, we are to become so accustomed to the dear profit-shark that we are unwilling to see him go? At

all events he is still here, and is able to keep up prices; yes, to boost them higher and higher by his ability to limit the market.

Health Commissioner Robertson, of Chicago, vouches for the correctness of these figures:

During the year 1918 there were two million pounds of foodstuffs shipped to Chicago which were necessarily destroyed, because they were spoiled and had to be condemned for the sake of the public health. There were 312,068 pounds of meat, presumably beef, pork, and mutton; 148,969 pounds of fish, 63,233 pounds of poultry, 240,553 pounds of fresh vegetables, 102,272 pounds of canned figs, 369,912 pounds of other canned fruits, 527,943 pounds of canned vegetables, and 19,572 pounds of eggs. It will be remembered that this prodigious wastage occurred while millions of people were obliged to go on short rations, because they had not the money to buy at the high prices. If the market had been open, the prices would have fallen to make room for the disposal of these vast stocks before they spoiled. But why worry about spoiling stocks when you can make it all up by raising the prices on what you have left?

No one knows yet how great the waste was in 1919, but some idea can be gained from the fact that surplus stocks in Chicago were much greater in 1919 than in 1918. It is a safe assumption that stocks are proportionate in other cities. At the end of June there were 211,956,577 pounds of foodstuffs in warehouses of Chicago, as compared with 155,248,487 pounds at the same time last year. Crated eggs are not counted in these figures.

Working for Profit

WHEN a man works for clients in a professional way he receives a fee, when he works in a white collar he receives a salary, when he works in a colored shirt he receives wages. What wages ought a man to receive for his work? He ought to receive enough compensation so that he can maintain a comfortable home, feed, clothe and educate himself, his wife and his children, with enough profit so that he can anticipate and provide for old age or other periods when he is unable to work.

Wages that will just keep the man himself housed, fed, clothed and contented are not sufficient. Wages that will just renew and support life are not sufficient: wages that provide for support only during the producing years are

not sufficient; it costs a lot of money to transform a six-pound baby into a six-foot man. Mothers are more important than machines; without mothers there would be no machines. The baby and the mother must be cared for, and the man must receive enough compensation to care for them, and to care for himself when he can no longer work. The pay which the man gets for the work he does in the shop must pay for the work done by both his wife and himself.

Wages today are usually the formal terms of an armistice in a battle that never really comes to an end. Employer and employe have diametrically opposite viewpoints and interests to serve; and the place where they come to agreement is the place where, for the time, it is more to the interests of both to have peace than to continue the fight.

The war has made tremendous changes in wages. It has made tremendous profits for employers and has witnessed a strenuous effort on the part of employes to retain the percentage of profit which has heretofore been theirs. With the end of the war came an earnest desire on the part of labor to retain all the advantages gained during the war, and an equally determined desire on the part of the employer to nullify these desires by boosting prices to a place where the net result to labor in the way of wages would be as little or less than that paid before the war came.

Foreigners who come to America manage to live and save fortunes on wages upon which Americans save nothing. The difference is in the standard of living. The desire for an improved standard of living for wife and children has much to do with the American's clamor for more and ever more wages. The more he makes the more he spends, and the more he spends the more he boosts the price of life's necessities for himself and everybody else.

Australian Items

AUSTRALIAN potteries are said to have lost much money from poor qualities in the clay; and the men of science have studied and tested the clays available, and are putting the business on its feet again.

The industrial unrest for which Australia was famous, between workers and employers, has been minimized, and according to the *Journal of Commerce* all classes seem to be working together on a better and more harmonious basis.

SOCIAL AND EDUCATIONAL

Hundreds of Millions for Roads

THE high point in road building was reached in 1916, but that was only a fifth of what is planned for 1920. The nation is waking up. Good-roads associations, trail associations, highway councils, and so on, have urged communities, states and the nation to construct better highways at a cost of millions to billions of dollars, and through the free spirit of spending engendered by the World War have converted the country. Almost as one man the people are demanding instantly the most modern and comprehensive system of roads in the world, and are ready to pay the price.

According to the *Engineering News-Record* American road-building presents demands for the building in five years of a mileage of roads greater than the 40,000-mile five-year record of railways in 1879 to 1883. The railway mileage cost about \$20,000 a mile, or a total of \$800,000,000; the expectation is that the next five years are to see 100,000 miles of first-class roads built at an average cost of \$30,000 a mile. The \$3,000,000,000 that this will cost does not affect anything but the imagination of a people accustomed to the raising of three to five billion at a time for purposes of destruction. The 1920 program alone calls for \$633,000,000, obtainable by millions as follows: \$165 unfinished work, \$273 from county, state and Federal governments, \$45 unexpended balances, \$50 from old bond issues, and \$100 from new bond issues.

No better roads have ever been constructed than some of those in project. Not even the ancient Roman roads equaled them. The world-famous French roads are not in the same class. These roads are not to be speedways or pleasure roads, but ways of the most substantial construction, fit to bear the brunt of the ever heavier impact of ever more powerful trucks and the coming trains of trucks, which are destined to appear in fleets on the American highways, and in large measure to supplant the railways as freight carriers.

The history of road-building in this country is typical of the progress from poverty to plenty. The original roads were forest or prairie trails. Then came the earth road maintained by the

personal labor of the taxpayers. Hard-surfaced roads could not even be suggested by the progressive, but permanent culverts and bridges were built. Here and there first-class roads were built by the state for object lessons, and finally the voters were ready for the huge highway-construction projects of today.

The roads required are of four classes. Roads are needed for agricultural purposes. This includes traffic from town to farm and from farm to town, a rapidly growing type of transportation wherever cities have been made centers of road systems on which are carried the crops and foodstuffs from regions remote from rail transportation.

The second type of roads is recreational, for local and tourist traffic. The tourist traffic is large and important, as tens of thousands of sightseers travel from state to state over the entire country. But it is only incidental to the immense amount of mileage—about 90%—for pleasure and health near the homes of automobile owners.

The third type of roads is commercial, to accommodate the traffic between large industrial centers, and is rapidly shaping up into an efficient transportation system for freight and express by truck which calls for a substantial type of road.

The fourth type is the military road, a variety of road not much in evidence in the United States, but wherever found it is of the most substantial character, intended to stand the rough work of heavy trucks and guns. Other high-class roads will answer this purpose nearly everywhere, but short stretches of distinctly military roads will be built here and there, as connecting links to the entire system.

There are country roads in the United States so muddy that it is said a baby carriage would be stuck on a 5% down grade. The mud assumes the consistency of sticky taffy and holds tight in its embrace anything that sets foot or wheel therein. In some Southern States the roads are practically impassable in certain months, and families that fail to stock up with coal and provisions for the mud siege go cold and hungry because stores and coal piles are

inaccessible. It is nothing uncommon in many sections of the country for the fields to be better to ride over than the alleged roads. In such regions civilization is an impossibility, and prosperity must languish for lack of a market.

The grade of even a good road affects its usefulness. The worst grade on an entire highway, even though over only a little hill, represents the efficiency of the entire road. A horse that can pull 2000 pounds on a level earth road can pull 1000 up a 5% grade and only 750 up a 10% grade. Grades are relatively worse on good roads than on ordinary earth roads. The percentage of efficiency loss is greater on the grades. On a level, improved road the same horse may draw 5000 pounds but on a 5% grade he can move only 1600 and up a 10% grade but 960—only a little more than that up the same grade on an earth road. The total waste chargeable to poor roads and to excessive grades on even good roads, thought of in terms of inefficient use of equipment, loss of marketing ability, reduction of productivity of farms, higher cost of farm products, and lower values of country properties, is simply too immense to be calculated. Some day it will be eliminated.

There is no question before the people, the solving of which would benefit them more than would the solution of the good-roads question. As famine impinges upon whole nations in the Old World and the signs of approaching distress are not wanting in America, the country does well to make provision for better methods of distributing food products with the minimum cost and the minimum number of middle-men.

The experience of one farmer is typical of that of tens of thousands. Writing to the *New York Times*, he says:

"Owning 240 acres I cultivated only about twenty-five, while at least 150 are cultivable. A neighbor of mine owning 360 acres does not cultivate his land at all. A very small part of the cultivable land in my district is tilled, and the question arises, Why? The answer is, Bad roads. My farm is four miles from the railroad; the country road by which we have to travel there is so bad that it is impossible for me to get in due time all the materials needed for the proper cultivation of all my land. As a direct result of the roads most farmers in my neighborhood are forced to sell out their stock and leave their farms. There are ten farms along the road leading from the railroad to my house, and out of these only two are inhabited by their owners. The other eight have been vacated."

In the World War in France the condition of the roads became a question of national importance. It has been truly said that France has been saved by her roads. Even at that the French roads were of such light construction that they broke down under the heavy traffic of the conflict. France had not looked far enough ahead to build roads that would stand the terrific pounding of artillery and of trains of heavy trucks driven at breakneck speed. There is only one objection raised to good roads, and that is by some of the church people, who complain that the roads tempt the people away from the services and out into the good fresh air and sunlight and into good health, to the damage, it is alleged, of the souls of the autoists and of ecclesiastical revenues. It was perhaps irreverently suggested in one country church that if the people were travelling to "hell" via the good roads, it was fortunate for any that went in Fords, for the Ford always "brings you back". That, however, is not an economic question, and for purposes of discussion is outside the scope of this article.

In the primitive era of road building the ownership of a pick and shovel or a team of horses constituted one a competent road architect; but, after much patient effort by civil engineers, the work has been reduced to the science of highway engineering, and roads are first designed and then built for economy, efficiency and permanency. At the best a road is a mechanism that lasts only a certain number of years before it is worn out; and it should be replaced.

The factors that enter into good road building are many and important. The principal one is that of obtaining trained engineering help to make surveys, plans, preliminary investigations and the inspection of work in progress. There is a distinct shortage of young engineers which cannot be very well overcome except through the slow process of technical education, for modern road work cannot be "picked up".

The salaries paid to men in various engineering positions are: chief engineer in charge of all work, \$8,000 to \$15,000; engineer of construction, and engineer of maintenance, \$6,000 to \$10,000 each; engineer of bridges, \$5,000 to \$8,000; office engineer, \$5,000 to \$8,000; engineer of tests, \$4,000 to \$7,000; district engineer, \$5,000 to \$8,000; advisory engineer to the chief engineer, \$5,000 to \$10,000; first assistant en-

engineers, \$3,600 to \$5,000; assistant engineers, \$2,400 to \$4,000; chief chemist, \$3,500 to \$5,000; assistant chemists, \$2,000 to \$4,000. The inspection service calls for technically educated men earning \$2,400 to \$4,000; and there are many junior engineers and assistants getting \$1,800 to \$2,400. This schedule gives some idea of the number of trained men in a large road project. With the scarcity of such men the salaries paid are likely to rise above these figures.

Another factor in the problem is that of obtaining the materials of construction. To date there has been a hit-or-miss way of getting materials, which is bound to cause a scarcity during 1920, and hamper the carrying out of the ambitious project for the year. Rumors are current of combinations of material-men to corner all available supplies and to carve out as large a slice as possible of the \$633,000,000 appropriation. "The profiteer ye have always with you." Among the supplies is an enormous quantity of cement, on which the public has to pay hundreds of dollars per mile to dealers who under a manufacturer's agreement never handle or even see the cement used on the roads built.

It would be a visionary theorist that would imagine that the 1920 program could be carried out in entirety with the present inefficient and inadequate car service. Where materials are to be carried a long distance by rail, they should be gathered in huge amounts at numerous supply depots; for when the busy season begins, railroad cars have to be diverted from such materials as those for road building. This difficulty alone has caused the highways for years back to be strewn with the financial wrecks of contracting concerns that could not get supplies, were held up in their work while expenses ran on, and were finally forced into bankruptcy, on account of lack of transportation facilities for their materials. The comment of President A. R. Hirst of the American Association of State Highway Officials, is, "We must interest ourselves in this railroad problem, because we can never build our roads, unless this American 'sleeping beauty', our railroad system, is given an injection of dynamite, and made to live."

But, for the highway engineer, the labor problem never sleeps. Men are scarce, when there is an estimated shortage of 2,000,000 common laborers. If different road projects or different states bid against one another, up goes

the wage of the laborer, and no more roads are built than before, for there are only so many workers for all the roads.

An important feature in modern road construction is the re-location of roads. The tendency has been to build along old roads; but now, when the roads are to be permanently located, they are being laid out with a view to the most efficient service both of today and of posterity. Sometimes the following of an old line over a hill preserves a grade that destroys the value of a section of miles of road. In road making the old order is passing and the new is already here. Roads are now built for the Golden Age.

The staggering cost of \$20,000 to \$30,000 a mile on roads that wear out in ten years or so unless properly maintained, has given pause to many that see roads financed with bonds running longer than the ten to twenty years' life of the mechanism. Road bonds have been issued to run as long as 50 years, but the present sensible tendency is to have them run not over 15 years, and not saddle the cost of a dead horse upon two generations to come after the roads have worn out.

When our fathers were boys it was considered dishonest to contract debts, private or public, beyond ability to pay in reasonable time. Again there is a tendency to limit debts, but only because of the results of public extravagance.

The movement now in full tide will begin a system of transportation by truck that in time shall gridiron the world. The Good Book, too, speaks of a system of highways that shall be of benefit to every one, and constitute an integral part of the work of the Golden Age. "And an highway shall be there, and a way, and it shall be called, The way of holiness; the unclean [morally] shall not pass [all the way] over it; but it shall be [built] for those [made for the unclean, that they may progress up to goodness, when they shall be no longer unclean]; the wayfaring men [anyone going over the road] though fools [thoughtless persons] shall not err therein." This is explained in plain words as follows: "The highway of the righteous is to depart from evil". (Proverbs 16:17) Continuing, the Good Book adds. "No lion [the devil tempting men to err] shall be there; it shall not be found there; but the redeemed [Christ redeemed all men] shall walk there; and the ransomed [Christ gave him-

self "a ransom for all"] of the Lord shall return [from sin and death], and come to Zion [to the true, heartfelt worship of God], with songs and everlasting joy upon their heads; they shall obtain joy and gladness, and sorrow and sighing shall flee away [forever]". (Isaiah 35: 8-10) Thus shall humanity depart from evil and come to God during the Golden Age.

Temperance—A Master Virtue By Joseph Greig

RECENT examples of the serving of alcoholic substitutes is evidence of evil as well as good in present efforts to banish hard drink from the earth. Prohibition has its dark side as well as its bright side. Its reactions are such as follow extreme positions on any subject.

We remember the arguments of certain sects who refuse to eat pork and other meats. They argue that Christ sent all the devils into the swine and hence that act puts a ban on pigs to the last ditch. They forget that the Lord partook of lamb, fish and possibly other forms of flesh upon occasion, and that the Apostle counseled other Christians to eat what is set before them asking no questions for consciences' sake, but to be thankful.

Now comes upon the scene a new class of reformers that has gone from hogs to pie crust, lard and other fats which generally enter a modern kitchen, and that denounces the brewing of harmless effervescent beverages.

By way of description of the "nip" of these effervesced waters let me tell a story I heard the other day. Sambo and Rastus were looking in at a drug store window exhibiting an array of sprudel waters.

"Ever taste that, Sambo?" asked Rastus.

"Yaas, indeed!" responded Sambo.

"How'd it done feel?" inquired Rastus.

"I can't 'zackly 'splain, but hits about like when yer foot's asleep," was the laconic reply.

Even common coffee is on the carpet now as an enemy of man, and some would wish its service curtailed by license, notwithstanding the fact that certain poisons are requisite to offset other poisons compounded in nature's laboratory. In these extreme positions we can see the need of reason and sense coming to the front, otherwise insanity may be enthroned as an angel of light. Such inconsistencies of an intemperate prohibition would make the cure worse than was the disease.

That great logician, St. Paul, argues to the effect that we are to "let no man therefore judge [rule] you in meat, or in drink, or in respect of an holy day, or of the new moon, or of the sabbath days". (Colossians 2:16) Moreover, he counseled young Timothy, "Drink no longer water, but use a little wine for thy stomach's sake and thine often infirmities".—1 Tim. 5: 23.

The same principle is observable in the Master's reproof of the Pharisees:

"Woe unto you, scribes and Pharisees, hypocrites! for ye pay tithe of mint, anise and cummin, and have omitted the weightier matters of the law, judgment, mercy and faith: these ought ye to have done, and not to leave the others undone. Ye blind guides, which strain at a gnat and swallow a camel. Woe unto you, scribes and Pharisees, hypocrites! for ye make clean the outside of the cup and of the platter, but within they are full of extortion and of excess. Thou blind Pharisee, cleanse first that which is within the cup and platter, that the outside of them may be clean also. Woe unto you, scribes and Pharisees, hypocrites! for ye are like unto whited sepulchres, which indeed appear beautiful outward, but are within full of dead men's bones, and of all uncleanness. Even so ye also outwardly appear righteous unto men, but within ye are full of hypocrisy and iniquity. Woe unto you, scribes and Pharisees, hypocrites! because ye build the tombs of the prophets, and garnish the sepulchres of the righteous, and say, If we had been in the days of our fathers, we would not have been partakers with them in the blood of the prophets. Wherefore ye be witnesses unto yourselves, that ye are the children of them which killed the prophets. Fill ye up then the measure of your fathers. Ye serpents, ye generation of vipers." —Matthew 23: 23 - 33.

In view of the foregoing we must concede that climatic conditions have to do with fermentation and that the old saying "One man's meat is another man's poison" is true. We must also agree that moderation serves as the best equilibrant in all questions of public interest. "Words" and not "eats" or "drinks" will be the criterion of character in the age to come (Luke 6: 45), the age when "the desert shall rejoice and blossom as the rose" and when "the fields shall yield their increase".

MANUFACTURING AND MINING

Power Prospects

THE present status of the power situation throughout the world is that outside of man and beast power there are four primary sources of power—water, coal, oil, and gas. The application of the power obtained is made through the agency of steam, or electricity, or directly; for example, power from coal is usable only by heating water into steam which in turn moves machinery or rotates electrical machinery from which electricity turns motors to operate machinery. There are no other sources of power of commercial importance, though some of these are used to a very small extent. In the pursuit of new sources many keen minds are reaching out and heard of occasionally through the press.

The chief source of power is coal. The earth contains a fixed amount of coal and careful estimates have been made of how long the output of the black diamond can be relied upon. Power is the index of civilization, and wherever power is to be had thither will the march of empire trend. Regions where coal has been abundant and in which great cities, teeming with industry, have sprung up, are destined to decay as power becomes dearer; for new industries are located in them, and old ones migrate to cheap-power places.

Ignoring the power situation in the rest of the world, that in the United States begins to present the phenomena attendant upon the local exhaustion of temporary sources of power. As the great Pennsylvania beds of coal are mined out and the price of coal in the East doubles and trebles, manufacturing is bound to leave the East and locate in the midst of the larger and more lasting coal fields of the South and Middle West. Even if there should be "a revolution in the use of coal", the migration of industry would only be postponed; ultimately the remnants of Eastern coal would be reserved for the public utilities, such as gas, electric light, and electric railways. This signifies the final passing of industrial supremacy from such states as Pennsylvania, New York, Connecticut, Massachusetts, and Rhode Island, which are destined to sink economically to the plane of states like Maine, New Hampshire and Vermont, except in water-power localities.

According to the State Geologist of Pennsylvania, in the *Electrical World*, the future of manufacturing being determined by the price of power, the coming locations of industry are indicated by the Government prices of coal as follows, all of which are lower than Pennsylvania prices: Ohio, \$2 to \$3.75; Kentucky, \$1.95 to \$3.55; Illinois, \$1.95 to \$2.65. Wherever the cheap coals are, expressed in terms of power obtainable per dollar's worth of coal, industry will go, and population will build up about the mills and factories.

The United States has about three and one-half trillion tons of coal, of which two trillions are inferior because of the presence of an excessive amount of water. Of the one and one-half trillions remaining a great proportion represents inferior coals, the better portion having been already dug. Industry is using half a billion a year. At this rate the coal would seem to be likely to last some 3000 years. But the rate of use of bituminous has jumped many fold in recent decades. If it should yet increase ten times, the available good coals would last some 300 years, but with the almost unimaginable population of the Golden Age it might multiply five times more, in which event the exhaustion of the better coals would be a matter of less than a century after the consumption had reached the ultimate figure. The Pennsylvania soft coals, with no increase in rate of use, are expected to see exhaustion in thirty-five years. The fine coals of the Pocahontas fields of Virginia and West Virginia are good for ninety years. Some of the anthracite beds are destined to be worked out in ten to twenty years, after which localities and cities now prosperous will begin to be abandoned. It will, of course, be a gradual process, for as the limits are approached, the cost of production will rise and cheaper coals be used. But the end of prosperity for certain regions is unavoidable, so far as coal is concerned. How fast the country's coal is going is seen by the ton production:

1840.....	2,000,000	1890.....	157,000,000
1850.....	7,000,000	1900.....	269,000,000
1860.....	14,000,000	1910.....	501,000,000
1870.....	33,000,000	1918.....	685,000,000
1880.....	71,000,000		

The streams of the United States in their waterfalls and rapids possess a latent water power of 320,000,000 horse power, an amount vastly greater than the 30,000,000 horse power of all the country's stationary steam, steam and gas engines and water power plants; but most of this could not be utilized economically, and the net available horse power from water is estimated at nine times that of all the power plants in use—steam, water and gas. It is estimated that about 270,000,000 is the available horse power from the streams.

It is urged that this "white coal" be developed rapidly, but its advocates forget that this would only bring a re-location of industry the sooner, for only a third of the water power is in the industrial section. They also forget that per unit of power, the construction of a water-power plant calls for a much larger investment than that of a steam plant, partly because no plant is economical unless it is on a very large scale. The Central states have little water power, but that of the South totals 4,000,000 horsepower, the Far West 16,000,000 and the Pacific Coast 23,000,000. On a water-power basis the natural re-location of industry would be in the states now having the least population; but this question of population would correct itself as power was made available, for the inevitable flow of industry is toward the regions having the most and the cheapest power, a condition that speaks volumes for the coming density of the population of states now but sparsely inhabited.

It is when speaking of electric power that the imagination of the people begins to soar. But electricity is not in itself a source of power, but a product of one of the primary sources, and its coming use depends upon coal and water, without which there can be little electricity, for there is now no commercial method of obtaining it otherwise. There is, however, an ambitious plan for the mobilizing of the electric resources of the country into a national system composed of great groups of power-producing regions. The proposed districts are, New England, Eastern Pennsylvania, New Jersey, Western Pennsylvania, Eastern Ohio, and the Southern States. The plan is to favor the large plants—financed by Wall Street, of course—eliminate the smaller plants, connect all parts of a region with long-distance transmission

lines of 110,000 to 132,000 voltage, and inter-connect the groups in the same manner, as far as practicable. "It is of vital importance", says the *Electrical World*, "for conservation of resources, for economy of production and for general industrial efficiency that the bulk of the power used should be made by central systems as against isolated plants; therefore let us try to get our lawmakers and public executives, national, state, and municipal, to take the Government point of view; in other words, to think in terms of war, which are also terms of peace from a Governmental standpoint, and uniformly and rationally to encourage central power development, provide for a just return to capital in electric power business and grant monopolies under regulations that will foster coördination and interstate operations". In plain words, "No more little electrical enterprises", but a Government monopoly for the big ones now existing and a gradual but sure extermination of the little fish by the big ones. Thus is the electrical transmission of power to be managed for the best interests of the people, if it is for their interest to have power at a slightly lower rate on condition of it being in the hands of what will amount to a Government-favored monopoly of this important power.

Of the other sources of power the most used is oil, in the form of crude oil, kerosene, or gasoline. Oil fields are of temporary productiveness, are quickly exhausted, and must be replaced by the discovery of new fields. It is questionable, in a long view of the power situation, how much dependence can be placed on oil. The American fields are already drained nearly dry or showing signs of early exhaustion.

Alcohol appears to be destined to an increasing use as a source of power, but its cost keeps it out of the field until gasoline rises to a point to admit of competition. A new method of getting power from coal is to pump live steam and air down to a seam of coal, with the expectation that the combination will produce a combustible gas which can be utilized. Peat beds are looked upon as likely some time to be of importance in the production of power. France is developing a system of water-power plants to utilize the power of the tides. In the arid West there are a few plants in which the heat of the sun is concentrated by mirrors on a boiler that makes steam for a steam plant. (to Page 363)

FINANCE·COMMERCE·TRANSPORTATION

An Era of Progress

By Newton T. Hartshorn

NEVER in the history of the human race have we been borne along on such a tide as now. A focal concentration of events, changes, and consummations is projecting us at an amazing speed in a current that cannot be accounted for by any theory of evolution or development. It is a psychological phenomenon—a stupendous climax.

The events and results of the war, the destruction of a large part of the social, political, religious, financial and economic world, in addition to the great loss of human life, diverted our attention for the time from other events and results of equal significance, if not of equal importance. One of these problems is the economic revolution in transportation that was in process of solution when the war commenced; and it continues with even greater impetus to hold the attention.

It is only seventy-five years since the six-horse team was the largest unit in land transportation, and the locomotive was then at the same stage of development that the flying machine is now; in fact the latter has far greater possibilities than the former ever had, because no grading or road-bed is needed. The initial cost of the machine is not a tenth of that of the locomotive or coach. The flying machine is not confined to any fixed course or road or altitude; it covers both land and water without transshipment of load; its friction is reduced to a minimum, and its attainable speed is fourfold that of the locomotive.

According to the New York *Sun* Major Reed Landis, second American ace, holds that aerial passengers can be carried from New York to Chicago in eight hours for \$37.52, at a profit of 50% for the carrier. The eight-hour schedule is ten hours less than any paying passenger ever bridged the distance before. Major Landis makes his calculations of profit on the basis of \$18.76 as the actual cost of the trip. The type of planes Major Landis recommends for the service would carry twenty-five passengers and make one trip a day. If there is an error in his figures, the Major says, it is in overestimation of the cost.

As soon as steam transportation on land by steam power became general and stabilized, its economic value began to be threatened by the electric trolley; and as soon as the use of the trolley car became general and stabilized, its economic value began to be threatened by the explosive motor, the auto car and auto truck; and now the flying machine threatens the economic value of them all.

Is it not inevitable that a large part of the millions of freight and passenger cars and locomotives, besides the rails, will be valued only as old junk, and the largest part of the stations be used for other purposes than designed by the builders?

Already the stocks and bonds of most of the railroads and trolley lines have ceased to pay dividends and interest. May not the holders of large blocks of them be preparing to unload on the inexperienced public or to unload the junk on the Government? May we not see them favoring Government ownership ere long?

If fares or freights are raised to produce more income, it will only speed up auto bus, truck and flying machine construction, and result in fewer passengers and less freight except for long hauls.

Still another feature in the economic revolution threatens to add many billions to the loss of hundreds of billions by war and by the scrapping of the railroads. It is only a relatively few years since the wires of the telegraph systems were first strung like a net over the earth and under the ocean, at the cost of billions. Soon the telephone began to threaten the economic value of the telegraph and the latter ceased to pay dividends, and now the latest discoveries in the wireless system threatens to send all the wires of both the telegraph and the telephone companies to the scrap heap, as the cost of the new system is negligible.

The foregoing is an illustration of the fundamental changes going on in every department of human life and activity; there is not a single exception; it is an astounding phenomenon. Only six years ago the great Russian, German and Austrian governments towered with mighty power, as firm apparently as the Rocky Mount-

ains: now they have entirely disappeared from the political landscape; they are leveled to the plain. The great religious systems are no exception. The Methodist church reports the greatest loss of membership in 150 years.

All this, however, can be accounted for by the fact, which every one admits, that the human race has been living under a social, political, religious and economic system that was defective. We must submit to the compelling proof that the over-ruling divine power is now taking direct control of human affairs and gradually substituting for the old defective system a better one—that of the Golden Age.

England's New Advantage

IN VIEW of what England suffered during the World War, few Americans will begrudge her the great advantage which she now enjoys in the markets of the world because of the carnival of high prices in the United States, and the high rates of exchange. Few countries can afford to import anything from the United States, at present prevailing prices, but they can afford to import from Britain, because the British prices for things are away down below the American level. Britain cannot afford to buy from America in large quantities when she can get but \$3.34 for her pound that is normally worth \$4.866½, but she can afford to buy in large quantities from the poverty-stricken countries about her and they are glad to sell to her.

As the situation stands, it is greatly to the benefit of Britain to buy from other countries and to sell to the United States; and there is no doubt that in the near future immense quantities of European goods, bought by Britain at low prices, will be flooding the American markets. And when that happens prices here will come down with a bang, and those that have saved nothing out of their war profits will be caught in the pinch.

There are many truly patriotic men who believe that it would be best at this juncture to raise interest rates to 10% so as to compel the people to save something. But if that is done the thousands who have invested their savings in high-grade railroad 4% to 4½% bonds will naturally feel that their investment in those bonds was a poor bargain.

The financial condition of the world reminds us of the words of the Psalmist, "All the foundations of the earth are out of course". In the

same connection he gives some very excellent advice to earth's rulers at the present time. It should be remembered in reading the psalm in question that the word "gods" means "mighty ones" and is used in the Scriptures not only respecting Jehovah but also respecting the mighty ones of earth. See Psalm 82:1-5.

Liberty in America

THE influence of liberty in America has been a potent factor in breaking the shackles of serfdom throughout the world. The practical illustration of people governing themselves so successfully, so prosperously, excited the admiration and envy of their relatives and friends in every part of Europe, and led to the concession of greater liberties everywhere. Still better times for this country and for all the world are ahead, in the better day, the Golden Age, foretold by the mouth of all the holy prophets since the world began. "In his days [Christ's days] shall the righteous flourish; and abundance of peace so long as the moon endureth."—Psalm 72:7; Isaiah 9:7.

Power Prospects

(Continued from Page 364)

Here and there some one appears with claims to have developed, or to be on the track of, revolutionary ideas pertaining to the development of power. These claims seldom amount to anything, but a recital of them is useful as an index of the extent to which inventive minds are reaching out for the better and as yet unknown sources of power of the future, which some one is bound to discover in due time; for the Golden Age will be characterized by agencies and methods beside which those of today will appear like the crudities of ancient history. That such things are coming and are in the mind of the good Father is evident, and that he has a due time for suggesting the ideas to the minds of men appears from the fact that some important inventions of the past were foreknown and even the time of their appearance indicated. All these and many others will be included in the blessings of the better order of things that will shape up when the smoke of war and other disturbances begins to clear away. Of that time it is written, "I will open you the windows of heaven, and pour you out a blessing, that there shall not be room enough to receive it".—Malachi 3:10.

POLITICAL—DOMESTIC AND FOREIGN

Justice and the Poor

Reginald Heber Smith,
of the Boston Bar

FREEDOM AND EQUALITY OF JUSTICE—Freedom and equality of justice are twin fundamental conceptions of American jurisprudence. Together they form the basic principle on which our entire plan for the administration of justice is built. They are so deep-rooted in the body and spirit of our laws that the very meaning which we ascribe to the word justice embraces them. A system which created class distinctions, having one law for the rich and another for the poor, which was a respecter of persons, granting its protection to one citizen and denying it to his fellow, we would unhesitatingly condemn as unjust, as devoid of those essentials without which there can be no justice.

From the dawn of Anglo-Saxon legal history, this idea has been manifest. The earliest laws continually directed that justice be done alike to rich and poor. The equal right to law was asserted in the Charter of Liberties of Henry II. The idea received its classic embodiment and statement in the fortieth paragraph of Magna Charta, wherein was inscribed, "We will sell to no one, deny to no one, or make a difference in, either right or justice". This did not signify, or inaugurate, an era of absolute freedom of justice, but it was a first step in that direction. Its supreme importance, however, lies in the tradition which gradually attached to it, and which glorified the idea into an ideal—an ideal which steadily persisted in men's minds throughout five centuries, and which was brought by the colonists to the New World.

In the constitutional conventions which followed the American Revolution the ideal was given concrete expression in the various State Bills and Declarations of Rights. The Massachusetts Constitution, adopted in 1780, declared: "Every subject of the Commonwealth ought to find a certain remedy, by having recourse to the laws, for all injuries or wrongs which he may receive in his person, property, or character. He ought to obtain right and justice freely, and without being obliged to purchase it; completely, and without any denial; promptly, and without delay; conformably to the laws."

As state after state has been added to the Union, its people, in constitutional assembly, have written the same declaration into their fundamental law. In New York the declaration is contained in a statute, but this is exceptional. Today, the constitution of nearly every state, by express provision of the Bill of Rights, guarantees the freedom and equality of justice. The Fourteenth Amendment to the Constitution of the United States adds to the state guaranty the authority of the supreme law of the land.

As a matter of law, the right stands inviolable. It is recognized and established by the highest possible authority. But that is not all. Its incorporation into the Bills of Rights transformed the principle from merely a legal or juristic conception to a political consideration of supreme importance. Not only was the right to freedom and equality of justice set apart with those other cardinal rights of liberty and of conscience which were deemed sacred and inalienable, but it was made the most important of all because on it all the other rights, even the rights to life, liberty, and the pursuit of happiness, were made to depend. In a word, it became the cornerstone of the Republic.

Ours was designed to be and is a government of laws and not of men. Under a government so constituted the right of the individual to life, to freedom of motion, of thought, of conscience, to his children, to his home, and the social interest in securing these things to human beings—all depend, in the last resort, entirely and absolutely on law. This is recognized by our constitutions, and has been repeatedly emphasized by decisions of courts, in the speeches of statesmen, and in treatises on government. The New Hampshire constitution, which is typical, thus expresses it: "It is essential to the preservation of the rights of every individual, his life, liberty, property, and character, that there be an impartial interpretation of the laws and administration of justice".

To secure impartial laws and an equal administration of justice, and thereby to make possible the enjoyment of the rights and opportunities contemplated by a democracy, the state itself exists. The best welfare and the greatest

possible happiness of the men, women and children of the nation is the ultimate goal. The state is their servant and its government the means by which the end can best be obtained.

Concerning these fundamentals there is no dispute, at least within America. Their extended statement here would be superfluous but for the fact that, although the dependency of every right and interest on law is recognized, the consequences which inevitably flow from such a form of government seem not to be generally appreciated.

These consequences, summarily stated, are:— First, there can be no political, social, or economic equality, no democracy, unless the substantive law by fair and equitable rules gives reality to equality by making it a living thing.

Second, the substantive law, however fair and equitable itself, is impotent to provide the necessary safeguards unless the administration of justice, which alone gives effect and force to substantive law, is in the highest sense impartial. It must be possible for the humblest to invoke the protection of the law, through proper proceedings in the courts for any invasion of his rights by whosoever attempted, or freedom and equality vanish into nothingness.

To withhold the equal protection of the laws, or to fail to carry out their intent by reason of inadequate machinery, is to undermine the entire structure, and threaten it with collapse. For the state to erect an uneven, partial administration of justice is to abnegate the very responsibility for which it exists, and is to accomplish by indirection an abridgement of the fundamental rights which the state is directly forbidden to infringe. To deny law or justice to any persons is, in actual effect, to outlaw them by stripping them of their only protection.

It is for such reasons that freedom and equality of justice are essential to a democracy and that denial of justice is the short cut to anarchy.

(This is the first of a series on "Justice and the Poor" by Mr. Smith, published in an important book of limited circulation by the Carnegie Foundation for the Advancement of Teaching, of New York. The subsequent articles will be: (2) Denial of Justice: The Fact; (3) Defects in the Administration of Justice; (4) The First Defect: Delay; (5) The Second Defect: Court Costs and Fees; (6) The Third Defect: Expense of Counsel.

The More Excellent Way By Lucella Richardson

THE principles which Christ has laid down, while often followed individually, have been applied but very little in national life. If the

nations which became Christian in name had really been so in deed, would they have been in the condition they are today?

For instance, suppose Napoleon, instead of overrunning Southern Europe and trying to conquer Russia, had said, "My people need more room; you have large tracts you are not occupying; let us develop some of it"; and Russia had replied, "Very well, as we are one great family we will appoint a commission to consider how much you need and how much we can spare."

It may be said that this is impractical and could not be done. It has been done once, and once only, to my knowledge, in the history of the world. It was done in our own land of the sheltering wings, where so many of the persecuted of the earth fled for refuge.

The noble work was done so quietly, and the world at present is so prone to think that great deeds must be accompanied by great noise and flourish, that the name of the statesman who did the deed is not often mentioned among the great men of our country.

Though high in station, like Moses, he "chose rather to suffer affliction with the people of God than to enjoy the pleasures of sin for a season". Using his influence with the king, he obtained a grant of land in the new world, that he might lead his people where they could worship God unmolested.

In a primitive country, among savages, he founded a state without bloodshed. He said to the Indians, "We are all one flesh and blood. Being brethren, no advantage shall be taken on either side. When disputes arise we will settle them in council. Between us there shall be nothing but openness and love."

The chiefs replied, "While the rivers run and the sun shines we will live in peace with the children of William Penn", and according to the historian, "the treaty was sacredly kept". While the other colonies were in constant fear of Indian raids, Pennsylvania had peace throughout her borders.

The historian adds, "The colonial history of the state founded by Penn is one of special interest and pleasure. It is a narration of the victories of peace and the triumph of peaceful principles over violence and wrong."

With the Golden Age come love and justice world-wide, when all communities will deal with one another as Penn and the North American savages dealt so long ago.

AGRICULTURE AND HUSBANDRY

The Great American Hen

THE American hen is not an American; she came from Asia in the first place, but she does not now look much as she did in the forests of India and China where hens still run wild. She is several times as large and produces several times as many eggs in the course of a year as does her Asiatic sister.

The egg-laying powers of a hen are transmitted from father to daughter and not from mother to daughter, and they are transmitted from father to son, not from mother to son. In the pedigree of a hen it is all important to know that she comes of a long line of male ancestors of good egg producers. It is the rooster, not the hen, that determines whether the next generation shall be great egg producers.

When the dainty female chick steps out of her shell she has in her little body the whole number of eggs, about 650, that she will ever lay. Born in April the young hen begins laying in the Autumn and does all she will do for the world within the next two years, at the end of which time she constitutes the piece de resistance for a Sunday dinner.

The average hen produces 120 eggs per year, the extra good hen 200 eggs per year, and instances are on record where more than 300 per year have been produced. The average egg production is slowly improving. It has improved more rapidly since it was discovered that the egg-laying powers are transmitted through the males instead of the females.

The hen is a subject of perpetual study and experiment, to see how she can be made to produce the largest possible results for the amount that it costs to feed and care for her. It has been found that hens can be forced in growth and productivity by electrical baths, produced by charging the wire about their cages for a certain number of minutes in each hour. Hens thus electrically charged require less food, grow faster and produce more eggs than those which are not thus electrified.

Experiments have also been made in lengthening the hen's working day during the winter season by illuminating the chicken houses for an hour or so in the early evening and in the

early morning. It is found that this also aids productivity, although sometimes the shell of the forced eggs are too thin to ship well.

As a result of the efforts of breeders we are promised that in the near future we shall have chickens as large as turkeys and that they will lay eggs in proportion to their size, and in large numbers. These achievements in the dawn of the Golden Age are, we think, an argument against the position taken by vegetarians.

Eastern Farmers Awakening

PERHAPS it was the more fertile soil of the West that caused the Western farmers to awaken before their Eastern brothers, or perhaps, as some claim, there is something in the atmosphere of the Western States that leads people to be more alert and progressive; but it is undeniable that the Westerners appreciated the possibilities of scientific farming before it was generally accepted in the East. Now the Easterners are beginning to get their eyes opened to the advantage of this method.

It is now getting pretty generally noised around among Eastern farmers that any poor piece of land can be turned into a fertile and profitable area in a very short time by the inexpensive and practical method of sowing it to inoculated legumes such as hairy vetch or soy beans. The preparations for inoculating the seeds can be obtained at any seed warehouse, and cost but the merest trifle. The hairy vetch can be sown with rye. The soy beans make a valuable crop of hay aside from the worth of the seed beans obtained.

Following a stand of vetch and rye, clover will do excellently where before it would hardly grow at all, and wheat will follow soy beans with a crop that would have been impossible but for the previous planting of soy beans. The planting of legumes cannot be made a success without the inoculation.

The discovery of a simple method of inoculating the soil so that what was formerly an unprofitable piece of ground or a barren waste becomes a fruitful and profitable area, is suggestive of the Scripture which, with respect to the Golden Age, tells of other changes that are

coming: "In the wilderness shall waters break out and streams in the desert. And the parched ground shall become a pool, and the thirsty land springs of water: in the habitation of dragons [jackals], where each lay, shall be grass with reeds and rushes."—Isaiah 35: 6, 7.

No Summer

THERE is no prospect that this year will have no summer, but there was such a year a century ago.

In 1816 sunspots were at a maximum, a condition which is liable to reduce the earth's average temperature a degree or two, and it was a very cold year—one of a cluster of cool years—including the dates 1812 to 1816.

The year started with a mild January and February. March turned cool, April began warm, but toward the end saw the northern states hard with ice and snow. May had ice an inch thick, and plantings of seeds were repeatedly destroyed by the cold. June supplied ice on streams and ponds, and snow running to ten inches in Vermont, killing nearly every green thing. The month saw little rain, and a few warm days, but most of the time had "a fiercely cold wind from the north". Farmers wore overcoats and mittens. One farmer built roaring fires around his corn field and saved the crop. Fears were entertained that the sun was cooling off. "Picnics were strictly prohibited."

July gave America frost and ice and killed all the corn except the little planted in very protected places. In August brooks and ponds began to be covered with ice, and seed corn ran up to \$5 a bushel. September had a fortnight of the year's pleasantest weather, but experienced ice an inch thick. Very cold weather ruled in October and November. December was described as "comfortable," and the winter was mild. Europe suffered from cold throughout the year, and in 1817 England saw bread riots on account of the crop failure of "the year without a summer," for all through that twelve months "the sun's rays seemed to be destitute of heat; all nature was clad in sable hue, and men exhibited no little anxiety concerning the future of this life."

Sunspots were unusually plentiful and large in 1919, but that is no indication that 1920 will have them and be a cold year. If the "year without a summer" should come again, and the

total crop failure of 1816 with 8,000,000 population be repeated, the condition of the country would be indescribable with a population of over a hundred million! Whether it is to come through a cold season or through short acreage of planting by discouraged farmers, the Bible indicates that just before the inauguration of the Golden Age, "Great earthquakes shall be in divers [various] places, and famines [like those in Europe, Russia and India], and pestilences" [like the typhus in the War districts and the world-wide influenza]. (Luke 21:11) The same things are referred to in Revelation where mention is made of the coming downfall of a great and oppressive system prophetically termed "Babylon"—"Therefore shall her [this system's] plagues [punishments] come in one day [probably one year], death, and mourning [for the dead] and famine."—Revelation 18:8.

Australia Makes Progress

THE traveler to Australia is likely to remark about the new spirit of industry and progress. For a year or more the scientist has been collaborating with business, the professor with the tradesman, and the continent's best brains are pushing things to produce beneficial results for all the people.

Australia has been short of native paper. Many plants have been tested for their pulp-producing capacity, and it has been demonstrated that paper can be made from trees of the abundant eucalyptus family.

A device has been invented for starting internal combustion engines using alcohol while cold, it having been necessary hitherto to start with gasoline. A mechanical cotton-picking machine has been tested out and is in successful use. The sea is made to give up its riches; common kelp is changed into a product which turns perfectly in the lathe, holds a good polish, and can be made into buttons, insulators, and other articles. The sheep fly has troubled the continent's extensive sheep-raising industry, and a new parasite has been introduced to destroy the pest. Potash, much needed in agriculture, is obtained from the water hyacinth, or common river weed, and from deposits of alunite. Scientific road construction with Australian materials has been worked out, and the materials tested, and better roads may soon begin to take the place of the present road system.

SCIENCE AND INVENTION

The Rotary Gas Engine

By J. L. Martin

THOUSANDS of inventive geniuses have sought to solve successfully the problem of applying compressed steam and exploding gases directly to power shaft; and millions of dollars have been spent without practical results. A practical rotary engine means simplicity, constant torque, lightness of weight, compactness of space, and economy of fuel and lubrication; also the minimum of trouble and repairs. Two types of steam engines built on the rotary principle are in successful use; the well-known turbine for high-speed revolutions only, and the Augustine for all speeds.

In response to the demand for a satisfactory rotary gas-oil engine, Mr. B. F. Augustine of Buffalo, N. Y., has invented and successfully developed such a motor; and it seems there is nothing further left to be desired. It is the marvel of the engineers who have seen it. This motor revolves with the power shaft, while the bearing shaft of the pistons remains stationary. This shaft is set eccentric to the power shaft; which causes the pistons (arranged radially) alternately to approach to and to recede from the cylindrical walls of the motor casing, which is perforated and provided with piston cylinders which protrude outwardly for air cooling.

The piston rods have three joints, corresponding to the wrist, elbow, and shoulder joints of the human arm. The exploding charge of gas forces the relaxed piston outwardly in line with centrifugal force, thus straightening out the sections of the piston rod; and by this action, leverage, or a rotary impulse is imparted to the cylinder and therefore to the motor. The fulcrum for leverage is based upon the stationary bearing shaft.

The pistons are double-acting. On the return stroke the fuel oil is pumped into the vaporizing chamber, which, being surrounded by the exhaust gases in the exhaust chamber, absorbs the waste heat in vaporising the oil. An ingenious chambered disc having suitable cut-offs transfers the oil without valves. Fuel oil enters through the hollow bearing shaft, thus cooling all bearings; and the lubricating oil pipe enters the same way discharging centrally, and

being distributed by centrifugal force, thoroughly lubricates all bearing surfaces.

This motor involves the principle of superinduction; that is, there is always a 50% overcharge of unexploded gas left for instant delivery. This is important in starting the motor; and in aeroplane service will enable pilots to ascend to greater altitudes than with other motors of equal power; for all motors lose efficiency in proportion to height owing to decreasing air pressure on fuel oil which drives it into the vacuum created by the pumps.

Motorists experience trouble by an accumulation of carbon in the combustion chamber, owing to imperfect scavenging. From 30% to 50% of burnt gases and smoke remain and to that extent dilute the inflowing fresh gas and dilute the efficiency of the charge. In the Augustine motor all the waste products of combustion are expelled and the scavenging is 100%, leaving a clean spark plug.

All vehicles carrying gas motors are built very strong, to endure the constant vibration imparted by the reciprocating type of motors. In the rotary type there is no vibration; this will permit the use of lighter vehicles and add to the comfort of motorists.

This motor is economical with oil. A run of 137 miles has been made with an automobile with the consumption of but one quart of oil. Both gasoline and kerosene are used at will. Practically no heat is wasted. The exhaust outlet is never hot. Other motors heat when cooling by water.

The Augustine motor can be built with from one-half to one-fourth of the amount of material entering into the construction of reciprocating motors of equal horse power. It can be built with four to twelve cylinders, with only one ignition wire per set of cylinders. One type is being made so that two charges of gas are exploded simultaneously on opposite sides, thus balancing the strain. Since engine trouble has caused the death of many aeroplane pilots, it is expected that this wonderfully simple and efficient motor will prove to be a means of safety.

Other advantages are: weight three pounds per horse power; less than one-fourth the parts

found in other motors; no water, radiator nor fan; no poppet valves, cams, gears or springs; high or low speed; perfect control; revolutionary for all purposes. Surely this engine is another great step toward the Golden Age.

A Mathematical Prodigy

BLOOMINGTON, Illinois, has produced a prodigy. He can give an immediate answer to almost any mathematical question, and reels off millions as the ordinary citizen handles units. Ask him how many years, days, hours, minutes or seconds in one's life, and out comes the answer faster than one can write it. A noon-hour diversion is to memorize and repeat all the freight car numbers on the trains that dash by at the station.

Tell him it is 155 miles to Chicago, and ask how many pounds of rails in the track at eighty pounds to the yard, and without hesitation comes the answer, "534,448,000". Try him on an automobile wheel thirty inches in diameter, for the number of revolutions made in going to Chicago, and the result is, "104,476". Taking silver dollars one and a quarter inches across, ask him how many it takes to belt the 25,000 miles around the earth: the answer is "1,267,200,000". Ask the total of all the numbers up to 9,600 and you get "46,084,000". The total up to 78,000 is given as "3,042,939,000". The number of bricks required to lay a brick pavement for the 3,578 miles from New York to San Francisco, the pavement to be sixty feet wide and the bricks each eight by two inches, is "10,201,377,600". Divide 68,719,476.736 by 32,768; and the prodigy says, "2,097,152".

Mr. Stong has had this talent from boyhood, and says that he sees the answers instantly standing out in front of him, and that there is no particular mental strain in this feat.

Two explanations are given for the strange abilities of such prodigies. One is that no one takes the trouble to check up the answers and that any string of figures is enough to satisfy the hearers. Perhaps some readers may wish to check up the answers and see if they are correct. Another explanation is that such prodigies do these wonders, not by the power of their own minds, but that they are possessed by an evil spirit that has the higher powers of the spirit plane and can give the prodigy a vision of the answer at once.

The Iron Bug

NOT a bug made of iron, but one that makes iron. For the latest scientific statement is that iron ore beds are accumulated by bacteria having the power of extracting iron from their environment and leaving it in masses after their demise.

Iron is an essential constituent of many if not all living creatures. It is indispensable in human blood, and in that of all red-blooded animals. In some animals lacking red blood corpuscles iron is missing from the blood, but is found in large amounts in other parts of the body. It is necessary in certain processes in the life of plants; for without it plants could have none of their characteristic green color.

It is not strange, then, that it should be found that deposits of iron trace their origin to bacteria. Millions of the "iron bugs" lived and died to make one little piece of ore, and uncounted billions existed to produce the great ore beds. This was part of the provision that our Father made in preparing the earth so that it might be a good place for people to live on. "My God shall supply all your need" (Philippians 4:19), may truthfully be said of the arrangements made for all humanity, whether it be iron, or the other things that man requires.

Who Invented It?

IT IS seldom that one man can justly claim to have invented something entirely unaided. This is illustrated by the fact that eleven inventors are making official claim on the Governmental bounty of Great Britain for having invented the fighting tank. The Major-Generals, Sirs, Lieutenants, Colonels and Commodores who are seeking some of "the needful" from the Royal Commission on Awards to Inventors fail to realize that the most an inventor can usually do is to add his mite to what others have done before him, and that when he has really achieved something, if he is as wise as the Wise Man, he must come to realize this truth: "I looked on all the works that my hands had wrought, and on the labor that I had labored to do; and, behold, all was vanity and vexation of spirit, and there was no profit under the sun. And I turned myself to behold wisdom, and madness, and folly: for what can the man do that cometh after the king? even that which hath been already done."—Ecclesiastes 2:10-11.

TRAVEL AND MISCELLANY

COLOR & CHARACTER



The Tertiary Colors

IF THREE primary colors are combined in equal strengths the result is a neutral gray. But if one color predominates and the other two are about equally subservient, a grayed value of the strongest color will be produced.

When yellow is dominant, and red and blue about equal to each other, we have sage or, more lucidly speaking, gray yellow. If red is the strongest, and blue and yellow subordinate, the product is plum, or gray red. Blue in strongest value, and yellow and red each weaker, will give gray blue.

These grayed, or complex colors, with their almost endless ramifications, due to varying proportions, give us the most lasting pleasures of anything which the eye can sense. All greens in nature have red in them, all reds have some measure of green, all blues are grayed with some orange, and practically all violets have just a tinge of yellow, to make even the violet more pleasing. The more gray a color becomes, the more complex the nervous effort to sense it; the more, therefore, it appeals to the intellect, to reason and the powers of comparison. The choice beauty of the Persian rug is due to this soft graying of its component colors.

Perhaps no more happy example of tertiary coloring could be cited than Munkacsy's "The Blind Milton Dictating Paradise Lost to His Daughters", a large canvas which hangs in the galleries of the Lenox Library in New York. Not a single primary and not a pure secondary occur anywhere in the painting. All is in most felicitous keeping with the sublime character of the subject. One can almost feel the grand strophes and the "no mean heights" of that exalted work of poetry just by looking at the painter's work. There is also another small canvas in the same gallery, picturing a Venetian scene, in which a single touch of orange is the nearest approach to elementary color.



Christian Art Coming to Light

WHEN the Moslems took over the great church now known as St. Sophia's at Constantinople, according to their law not to destroy pictures of the human face, they sealed up some of the most wonderful treasures of Byzantine art ever known, and over them constructed the characteristic circles with the names of Mohammedan worthies in Arabic characters. Behind these circles, in a good state of preservation, are the finest specimens of art ever produced in glass, mosaic, etc., by Byzantine artists.

These hidden mosaics are formed of small pieces of glass of various colors kept in place with cement. The gold and silver mosaics are made of sheets of gold and silver leaf annealed between two plates of glass by a lost art. The main colors are red, blue and green, with other colors for shading faces and draperies. Whole walls and vaults are covered with these mosaics; and when they are lit up with the light of the sun or of hundreds of lamps, the effect is one of indescribable beauty. Among the concealed mosaics are a gigantic picture of the "Judgment of God", and four immense cherubim each with a head over four feet high, and four wings with upper feathers of light green and under feathers of brown.

In architectural features the structure has a 107-foot dome carried on four pillars, one at each corner, and composed of light pumice stone, and with the apex 175 feet above the floor. In other respects St. Sophia is one of the most remarkable buildings in the world. So extraordinary is its appearance that the awe-stricken Sultan Mohammed stopped at the door and, seeing a soldier hewing at the floor "for the faith", exclaimed, "Ye have the whole city to pillage and enslave; leave ye me the buildings!" The Mohammedans have never destroyed the treasures of art, but have covered them up. They have preserved whole cisterns or cellars full of priceless manuscripts of Greek and Byzantine literature and writings belonging to the early part of the gospel age, perhaps including works that will be invaluable in furthering our knowledge of the Bible.

Leprosy

By D. R. Pierce

IN THE Far East, among other things which engross the attention and deep sympathy of Western visitors are the numerous leper colonies, which are regular institutions.

In one town visited, having a population of 35,000, there was a colony of about 300 lepers in various stages of decay and death.

The wretchedness and poverty of these—shall we say human beings—was indescribable; and their poor, naked, starved, disease-racked bodies were far removed from those of the plump, well-fed, richly attired sight-seers, permitted to approach within a few feet of their village.

They were unable to work at a gainful occupation, because no one would touch a thing which had been touched by them. They refused to accept money, as they could not spend it for food. Only something they could use would be accepted. The local custom permitted them to visit the city each Friday afternoon to beg for food; and even here they must stay in the roadway of the streets, that no one might be contaminated. Their cry still rings in our ears; that cry for food, which was never wholly satisfied.

The Bible tells of many persons afflicted with this dreadful, loathsome disease, which well represents sin, and which may never be cured until the Golden Age brings its blessings, destroying suffering of all kinds. The curing of the sin-leprosy of humanity is illustrated in the experiences of the heathen general Naaman (2 Kings 5:1-14) of whom it is recorded that he was a leper, but was cleansed by obedience to the Word of God—dipping himself seven times in the river Jordan.

Smaller Newspapers

PARTLY through the difficulty of getting workers for the arduous labor of the lumber camps, and partly because of the lack of expansion of the paper pulp business during the war, the newspapers of the country are exhorted by the authorities to follow the example of THE GOLDEN AGE, make the papers smaller and pack more information into the space utilized.

The pulp and paper mills are running at 100% of capacity, and cannot produce more paper. Yet there is an estimated shortage of 200,000 tons a year of newsprint paper, and the newspapers are using 10% more paper than is now being made by the mills.

The unprecedented prosperity of the country has caused an unexpected amount of advertising to be inserted in the papers; and as the size of the papers is controlled chiefly by the amount of advertising, the papers have used up the surplus stock both in warehouses and in mills.

The remedies suggested are for the papers to cut down the size of the pages; charge more for the same advertising space and reduce the size of Sunday issues. It is hoped that a reduction of one-third in the quantity of paper may be effected. The weaker papers are expected to feel the brunt of the paper shortage, and many of them may be forced to suspend for lack of paper. By the weaker papers is meant those of small circulation and those of weak financial standing, whose credits are not the best with the paper dealers. The advertising rate advances are expected to reach 25% or 30%. The recommendations are voluntary, coming from the newspaper owners forming the American Publishers' Association.

Who Gets the Money?

WHEN anthracite is \$12 a ton, who gets the money? The figures for normal conditions are as follows:

Profits of operating company	\$0.33	2.75%
Materials, royalty, tax, depreciation and management	.99	8.28%
Loss on small sizes	1.57	13.10%
Transport'n from mine to N. Y. market	2.57	21.38%
Labor	2.98	24.83%
Retail cost and profit	3.56	29.66%

In abnormal times, as at present, when there are unexpected inequalities in the variations of prices and wages, it is possible for the profits to be much larger than the customary 33 cents; and the published statements bear out the presumption that the unsettled conditions have enabled profits to be abnormally increased, without a corresponding rise for labor. In the anthracite business a rise of 31.61%, such as the bituminous miners were led to expect, would increase the cost of the coal only 94 cents a ton—in fact less, because "labor" includes other costs than that of the miners. There is little question that any class of workers whose increase in pay has not equaled that of the cost of living to them as a class, ought to be put at least on a par with what they were before the war.

HOUSEWIFERY AND HYGIENE

Foods that Nourish *By Mrs. Andrew J. Holmes*

ANYTHING that will safeguard the health from the ravages of disease should be sought and used with all diligence. Health and strength is a precious possession that all should desire and seek to obtain, and having obtained it, they should use the spirit of a sound mind and so apply the laws of health in their daily living as to improve and increase their strength and vigor; for by so doing their efficiency is greater, no matter what their occupations may be. Any knowledge we may obtain on the subject should be used to that end.

The world is full of prematurely aged people, broken down, worn out, suffering from malnutrition, the result of the denaturing and emasculating of the foods which a wise Creator provides for the human family to live on. In the excessive use of refined foods men break down nature's defence against those great enemies of the human body, diabetes, tuberculosis, anaemia, pneumonia, and heart disease.

The great Creator designed that the diet of man and beast should contain not only the so-called essentials of protein, fat and carbohydrates, but also the salts and solubles, sometimes designated as vitamins, as well as the succulents and roughage, without all of which the glands do not function normally, the internal secretions lose their natural alkalinity, immunity to disease is destroyed, vitality is impaired, and resistance is lowered. "Deficiency disease" is a phrase used to describe many disorders due to an inadequate diet.

Take the case of a prospective mother: deficiency of diet undermines her state of health at a time when she is called upon to function more vitally than ever before, not only for herself but for her unborn child. Deficiency disease not only attacks the unborn child of the poorly nourished mother, but it attacks the mother herself. She is robbed of the ability to bring forth a healthy disease-resisting child, and is also robbed of her ability to keep her own tissues and her own internal secretions in a healthy condition. She attempts to perform two duties with but half the quantity and quality of material or food necessary to do one, the growth-

promoting and growth-controlling attributes of the young are lost, and the mother bears her child under very unfavorable conditions. She enters the period of lactation wholly unable to comply with nature's provision for the child.

A wise Creator has provided a diet for the human race that will furnish the material for the regeneration of tissue, with all the biochemical substances indispensable to the profoundly complex but perfectly normal processes of assimilation and elimination.

In whole grains, such as wheat, corn, rye, unpolished or brown rice, the elements necessary for nourishing and maintaining a healthy condition of the body are found, especially in the wheat berry, in which there are sixteen elements identical with the elements of which the human body is composed. Pure milk contains the same elements. In skim milk all elements remain but the fat.

In the process of refining white flour eight of those elements are removed, robbing it of just half of the nourishing quality. Each element before refining is in the right proportion to work together in harmony with the others, but in the refining process some elements are concentrated and some are entirely lacking. The whole thing is a disarrangement from the condition provided by nature. The most vital parts of the grain are taken from the flour and used to feed animals, and the abnormal starch content is put on the market to feed the people.

Few people know that the phosphorus found in wheat, corn, rice, barley and oats, which is removed from the various grains in refining them, is essential to the very life and health of the human body. In refining flour all the phosphorus compounds, iron compounds, calcium compounds, potassium compounds, and all the other mineral salts which the human system requires to carry on the chemical processes of health-building are taken away.

Today, as never before, people are asked to live on impoverished foods; impoverished grain products, impoverished breakfast foods, impoverished table syrups, impoverished fat and milk substitutes, impoverished egg substitutes, impoverished sugar, corn starch, corn oil, corn

syrup, potato oil, cottonseed oil, rice starch, cocoanut oil, tapioca starch, oleo oil, and wheat starch in the numerous forms in which they appear on the table of the average home.

Milk, until recently, and eggs, were the offsetting foods upon which people relied to make up for the deficiencies of white bread, white buns, white cookies, white biscuits, white pie crust, white doughnuts, soda crackers, deficient breakfast foods, etc., but now eggs have so increased in price that poor people are using as few as they can and the milk trust is doing the best it can to put milk out of the reach of the poor; and what will they use in place of these?

Next to tuberculosis, the most common complaint caused by refined foods is heart disease. Malnutrition is a direct cause of heart disease in its various forms. The heart is always enlarged following a diet deficient in iron, potassium, calcium, phosphorus and other mineral salts, colloids and vitamins, always found in such foods as wheat, corn, barley, buckwheat, oats, milk, fresh vegetables, greens, fruits, etc., before these elements are removed by the refining process they undergo.

There are numerous records proving that where refined foods are excessively used without offsetting foods in the diet, the heart becomes involved in from fifty to sixty days, and many records show that where offsetting foods are used to an extent sufficient to retard the progress of mineral starvation, the development of disease is delayed accordingly. The significance of these records is still further emphasized when it is considered that malnutrition is on the increase in the United States.

Thus as we grow in knowledge concerning the laws of nutrition, we are forced to conclude not as a theory, but as a fact, that the kind, quality, and quantity of food consumed by man does affect his health for good or evil and does affect every member of the human family. These facts demonstrate conclusively the folly of using foods which do not supply the needs of the body. The facts also demonstrate the necessity of accepting from the hands of a beneficent Providence the foods just as he has provided them for man's needs, and refusing to use those which have been manipulated for commercial purposes. If we are going to have food at all, let us, if possible, have it as a wise Creator designed and provided it. We need all the natural elements in food.

The reason why the millers go in for white flour is because they have a virtual monopoly of the white flour machinery and because white flour will keep indefinitely. They know that when they take out the germ all chance of the flour becoming rancid is gone, but they also know that the removal of the germ makes the flour about as nutritious as so much plaster of paris. Flour that contains all the elements necessary for life and health will keep a considerable time, but not as long as the starvation diet, commonly known as white flour.

I append a few health food recipes which I commend to the consideration of some of these "millions now living who will never die". You can tell your correspondent, M. S., from Paso Robles, California, that there is nothing in these that will kill him.

Health Food Recipes

Graham Bread

One yeast cake, three cups lukewarm water, one teaspoon salt, two tablespoons nut butter or crisco, four tablespoons molasses, five cups flour, half white and half graham. Dissolve yeast and shortening in lukewarm liquid. Add molasses and salt, then gradually enough flour, after it has been warmed, to make a dough that can be handled. Knead thoroughly, being sure to keep the dough soft. Cover and place where it will be very warm for about twelve hours or more. When double in bulk, turn out on kneading board and mold into loaves. Place in well-greased pans, cover and set to rise again until double in size, bake in a slow oven for one hour.

Graham Muffins

Two cups flour, half white and half graham, one-half teaspoon cream tartar, one-half teaspoon saleratus, one teaspoon salt, two-thirds cup sugar. Sift all together, mix with one pint of sweet or sour cream. Bake in hot oven until a dark brown.

Beans Without Meat

One quart yellow-eyed beans boiled about one hour in saleratus water—one scant teaspoon to enough hot water to more than cover. Drain, and add crisco about the size of a lemon, one good-sized onion cut up, one teaspoon ground mustard, salt and pepper to taste, two tablespoons molasses. Cook all day and serve hot.

RELIGION AND PHILOSOPHY

Is It for the Benefit of the Jews?

WHEN history is written there are many things that would be a surprise to the deceased makers of history, if they should arise from their graves and read the record. For history is written, not from the viewpoint of the day when it is made nor from the viewpoint of the makers, but from the viewpoint of the age and of the progressive thinkers of the time.

Before the League of Nations was even thought of, there had been other leagues of nations and leagues of kings, some of them so long ago and so buried in obscurity as to be forgotten. All of these leagues started with glowing promise of benefits for some one for some time, but after a few years operation all of them failed. Some of them left no tangible after-results; for they were motivated by fear or the other negative states of mind that impede all progress in any direction.

It is said to be possible that the most lasting good of the League of Nations may be for the benefit of a people who are scarcely mentioned in its provisions. If at all, the Jews figure merely as one of the "subject" peoples, whom it is the privilege of the great nations to uplift.

History may fully record that the League was an instrument used to permit that most ancient of all the nations, Israel, to occupy once more their native soil; to become a national entity again; to begin the visible progress toward the inheritance which will, when history is written, have become the Jews'. This ancient race is about to come into its own—a very great prospect; for when the low are made high and the high brought low, the most abased nation in the world is destined to rise to an eminence that will far more than repay them for their age-long bondage to unfavorable environments.

Be that as it may, the Jews through their Zionist organizations are planning for the reoccupation of Palestine, and are going right ahead with the execution of their plans. Regardless of delay in the final determination of the status of their country, the Zionists assume that out of the womb of the League will be born the Jewish Republic. This nationality is expected to continue under the wing of the League, with quite

complete autonomy and with absolute freedom from the intolerable restrictions from Turks and Europeans, which the Palestine Jews have suffered for centuries.

That the tide is rising there is no doubt, and it is said that no less than a million Jews will soon go from America and Europe to live in the fatherland. By hundreds of thousands the Jews are familiarizing themselves with the climate, soil, and business environment of Palestine, so as to be ready to go to their home. So much larger is this host than the existing Palestine population—mostly Turks and Arabs of a low order of education and ability—that its preponderance of numbers will automatically settle the social and political questions of the land.

Once in a while throughout history whole peoples have suddenly been seized with the desire to move on to other lands. This was illustrated in the hordes of Goths, Vandals and other Tartar peoples which from time to time appeared from their obscure homes and swept over large portions of Europe. Today the Jews are "on the move". The hegira of the Hebrews from Europe is about to take place, for "it is a literal fact that at the present moment a large part of the Jewish people is possessed with an irresistible impulse to strike its tents and move. A million strong, everywhere, impatient, with tense eagerness, the Jews are getting ready to sell their all, turn it into money, and proceed to abide for the rest of their lives in the homeland. They only wait the mandate of the League of Nations, to fix their political status for such a time as may be found necessary for the Jews to firmly establish themselves."

Dr. Saalkind, of the Jewish National Council for the Ukraine, tells how the emigration fervor has struck Russia: "Many have liquidated their property and made themselves ready to go. The Zionist offices at Kiev [Russia] are thronged with hundreds inquiring as to the possibility of early migration. Committees have arrived from various communities demanding facilities for at once sending their people to Palestine. They are prepared to go en masse. There is no risk of exaggeration in assuming that several hundred thousand, perhaps a million, people are

planning to leave Russia upon first opportunity."

It is only natural that when the news arrived in Russia of the prospect that a Jewish state would be erected in sacred old Judea, there should have arisen a boundless agitation for re-settlement in the historic land of the Jews. At any rate, according to Dr. Goldberg, chairman of the Zionist organization of Greater Russia, whole Jewish towns and communities have begun to make themselves ready to move as soon as communications should be opened.

There is no inducement to remain where they are. The great war was bad enough in the trials brought upon the Jews; but under the economic pressure of the revolution and counter-revolution, the very existence of the Jews in Russia has been undermined. Even bread to eat, to say nothing of comforts or luxuries, is endangered for three-quarters of the population of the Russian pale, by the presence of the revolution.

Preparations are being made to receive the home-coming host. The Zionist organizations of the world are making preparations to furnish the necessary administrators, engineers, specialist and other experts whose great and pleasant task will be to make Palestine ready for the wholesale migration about to take place.

That these things should happen now surprises no one familiar with the past and the predicted future of the Jews. This nation, which has been at the bottom so far as human rights have been concerned, is destined to rise to the very top. It is confidently predicted that not merely a Jewish nationality is to be the outcome of the present trend of Judaism, but that far greater things are in store for this devoted race, who have clung loyally to their nationality, their language, and their religion under circumstances that would have crushed the spirit of any other people. Their destiny is expected to be no less than the headship of the ultimate league of nations and peoples embracing the entire world, which the Bible and Jewish tradition say will endure forever.

Open Doors to Spiritism

THAT some authors, painters and composers achieve beautiful or powerful results under the influence of spiritism is well known. There has come from the mystical Orient a world of occult lore which is inspired by evil spirits. Books based on these ideas and magazine articles with-

out number are flooding the country. Some of the books are among the most widely read of the past five decades. They are of a type that gives an impression of something wonderful, or something beautiful, but vague, not clear-cut. Readers of works of this kind close the books with a sense of perplexity. The authors write as men in a fog.

One of the first American authors of this type was Emerson. With his interesting, mentally stimulating, but vague writings, he was the forerunner of many writers of works on mental science, the art of success, will power, personality, character building, self-help, psychology of a certain type, and of the power to control and manage others. Such works often produce a flush of mental exhilaration; but this passes away if the reader or student fails to submit his will and mind, without resistance, or criticism, to the will of the author.

One refusing to let his mind be as putty in the writer's hands, to give himself up to the alleged "flow of great spiritual currents", finds it impossible to obtain the worldly benefit promised in such books. Those that make this self-surrender may quickly find themselves in the state of a wealthy and "successful" man who says, "Any time I can lean back in my office chair, close my eyes, and see beautiful sights and hear entrancing music". Such works demand of the would-be seeker for success the abject surrender of the citadel of the will; and the success that may follow is largely owing to the coöperation of demons, who may at any time abandon him, and leave him to the abyss of loss of self-respect, of true religion, and of the bait presented by the demons—the good things of earth.

On the 1920 visit of the famous Belgian poet, Maurice Maeterlinck, to America light was thrown on the character of his writings. In a lecture given in New York the author said, "During the new year I shall write a new book. It shall be a volume dedicated to a study of the occult. I shall strive to rid spiritualism, mysticism, of the charlatanism that has discredited it so long". In other words, spiritism is to be made attractive to the host of refined and cultured readers, whose minds have been robbed of some measure of clear-cut discernment and judgment and prepared to receive out-and-out spiritualism by such charming but characteris-

tically vague, obscure works as "The Bluebird".

In connection with Mr. Maeterlinck's New York lecture he made it quite clear where he stood as regards the occult: "The lecturer told of the 'odic effluvia', 'discovered' by Reichenbach, the eminent Austrian scientist—a magnetic or vital fluid which emanates from the body every second, and which can be seen by hypnotic subjects in the dark, appearing bluish on the right side and yellowish red on the left, and varying in intensity with the state of the emotions in the person from whom they emanate'. This vital force, Mr. Maeterlinck held, was responsible for the phenomenon of 'table turning'. He described it as indestructible and susceptible of being infused into inanimate objects. This vital fluid, so independent of the body and impossible to destroy even by fire, might well be the spiritual principle which does not perish with us and points to immortal life." It is well for readers of the many works of this type to know surely that however beautiful such writings are, they are allied with or a part of the vast literature of the occult and the spiritualistic, and are an open door to demonism.

Every five-cent store sells booklets with the familiar question, "What Month Were You Born In?" These belong to the dark age occult "science" of astrology, as do the "horoscopes" published in some newspapers, and the zodiacal signs, the data on "birth stones" and other like matter in almanacs. We view all of these matters with suspicion. The telling of character by the month of one's birth found its origin in the worship of demons under the guise of the worship of various stars, planets and constellations named for the demon gods and goddesses of heathen religions of early history. The 360 degrees of the heavens were divided into twelve parts of thirty degrees, each containing some constellation which was worshipped as a demon deity. A person's character was imagined to be determined by the powers of the deity of the section of the heavens rising above the horizon at the moment of birth, and to be variously influenced by the relative positions of the planets—believed to be gods—at that moment.

It is asserted that data has been compiled to show some truth in the claims of astrology; but an even greater mass of fact disproves the claims. There is some truth also in the claims of spiritism, but that does not warrant the sur-

render of the will to evil spirits. Closely associated with this method of alleged character-determination is the prediction of the future by the stars, by palmistry, by cards, and by tea leaves and coffee grounds. Predictions of these kinds are nothing more than shrewd guesses, unless the prophet is a spirit medium, in which case they are the guesses of demons speaking or acting through the person of the medium—who may even be an agreeable young society woman, unwittingly possessed of occult "gifts". The safe way is to determine upon a course of resolute resistance to every door to demonism, no matter how charming the outlook through the door; for any door to demonism is a door to destruction.

An Imaginary Dialogue By Luella Richardson

THE great adversary hovering above the earth was joined by kindred spirits, who were seeking him and who greeted him boisterously, crying, "Hail, Lucifer, Son of the Morning!" He checked them with an angry gesture and frown. "Call me not by that name, reminding me, as it does, of ages past when I led a pure and happy existence." Surprised at this reply from their arrogant, self-confident chief, they looked at each other in dismay, whispering, "Something must have happened to disturb his majesty", and waited in silence further enlightenment. This they presently received.

Sullenly, as if talking to himself, he began: "On a little strip of land extending out into one of the great lakes have just met in convention those people whom Jehovah seems to favor; and as the waves sweep up on that shore so the messages of truth constantly spoken by their leaders swept over their minds until at last he whom they call their President stood before them."

Satan now roused himself, and turning to his companions spoke with more energy. "You remember when the Laodicean Messenger died, and his followers quivered under the blow like a flock of frightened sheep, we thought it would be an easy matter to overcome them. Then they chose this man as their leader. Then we succeeded in having him and his helpers thrown into prison, and since their release we have tried to thwart them in every possible way. Well, this man has conceived a plan by which he can throw broadcast among the people of the world these truths which we have tried so hard to sup-

press. As he stood there, outlining his plan and asking their help, those 7000 people as one man with uplifted hands and shouts of approval pledged their support; and we know to our cost how they can work."

"But, Prince", ventured to argue one of the bolder spirits, "suppose they do scatter the truth, think how much in our favor are conditions on the earth today; how much of strife and sorrow and suffering there is, and how much more power we have than ever before."

"I am thinking", was the reply, "I am looking back down the centuries; I see another time when conditions were favorable to us; I see another man stand as this one has, before a generation who laugh and sneer as he tells of the judgments of the Lord which are coming upon the earth. Did Noah's prophecy come true?" A groan from his hearers was his only answer.

One of the quieter spirits now addressed him. "Prince, you have spoken of a happier life which of course we all shared and remember. We know that some of these truths relate to us as well as to mankind, and the hope held out to them is also offered to us if like them we will repent. We are all tired of this existence and, as you hint, may receive some worse punishment. Why not accept the chance to get back into harmony with Jehovah?"

The majority of the spirits answered with a howl of anger, though some few of them looked thoughtful and moved toward the speaker. Satan, now in a towering rage, turned on him with fierce denunciation, ending his tirade with these words: "I know that you have already tried to aid these people, and now you and those that think as you do must leave our company forever. We purpose to think of some scheme by which we may be able to check this project of theirs, and if possible annihilate them. At any rate, know that we will never again yield allegiance to the King of heaven."

"Ah, well!" said the leader of the minority as they turned away, "The forces of good and evil are lining up for the last battle, in the closing days of this age, as they did in the last days of that other one when we were so much involved. We were on the wrong side then; let us try to be on the right side this time."

And we of the earth family who are on the right side, what a privilege is ours! Let us, dear fellow soldiers, look to our great Captain

for courage and help and, girding on the whole armor, go forth in his strength, confident that if we lose our lives for his sake we shall gain them.—Matthew 16: 25.

The Fearless Confute the Cowardly

SAYS W. T. Ellis in the *North American*: "Courage to tell the truth, the tactless truth, if need be, but the whole truth, in full proportion, is society's greatest present need. Half-knowledge and active prejudice abound; but it is the clear, comprehensive and uncolored truth that will save our time from blunders and delays. Fearless outspokenness is an apostolic quality that is needed more today than wisdom or wealth or winsomeness.

"We have a stirring story (Acts 2-4)—two fishermen, John and Peter, confronting cowardly officialdom by courageous confession. They had healed a lame man and made that miracle the text for a sermon upon Christ and the resurrection. Incensed at this unauthorized teaching, the ecclesiastical authorities clapped them into jail. Thus the Sanhedrin, like many another high court of religion since, tried to repress the rise of vital religion, which did not bear its seal and brand.

"Happy is the cause that can get its advocates sent to jail. Even Christianity owes more to its persecutors than to its official patrons. Peter and John started an apostolic fashion when they spent a night in custody for proclaiming the Name. Liberty has always progressed through prison bars. Error, reaction and oppression have consistently, throughout the centuries, committed the blunder of trying to restrain truth by force. The same proud Sanhedrin that had arrested and slain Jesus was now attempting the same tactics with his disciples. They lifted the Master so high on a convict's cross that all the world is enabled to see and adore him; in the case of Peter and John the prison cell served as a calcium light, to rivet the attention of Jerusalem upon them.

"Thinking to find the street-preachers cowed by a night in the prison, the Sanhedrin gathered the next morning, in full and solemn session, and set the fishermen in the midst to make answer concerning their credentials: 'By what power, or in what name, have you done this?'

"That is the arrogant way in which organiza-

tion usually functions. Kipling once wrote a stinging poem, 'Rimmon', about this very quality in the British war office. He might as well have written it about the American War Department or State Department, or the French or German foreign offices. Ecclesiastical boards and courts and councils develop the same arrogant intolerance and inefficiency.

"Progress has come by the courageous defiance of things as they are by the fearless champions of things as they ought to be. Reformers, saints, heroes, have all had to pass through the

Peter and John experience with the same Sanhedrin."

These are good, strong, true words by Dr. Ellis, who perhaps might also call to mind the many instances of Twentieth Century Christians in Canada and the United States in 1918 who suffered prison, mobbing, torture and even death for their faithful adherence to beliefs taught by the Bible, but so unpopular with the modern Sanhedrin that its members stood by without a protest when such things were going on about them and, in instances, led the mobs.

JUVENILE BIBLE STUDY

One question for each day is provided by this journal. The parent will find it interesting and helpful to have the child take up the question each day and aid it in finding the answer in the Scriptures, thus developing a knowledge of the Bible and where to find in it the things desired.

1. *Will God under any circumstances ever do anything unkind, unjust or cruel?*

Answer: See Psalm 100:5; James 1:17; Psalm 106:1; 5:4; 107:1; 25:8; 145:9; Habakkuk 1:3.

2. *What will become of the wilfully wicked and disobedient?*

Answer: See Genesis 2:17; Romans 6:23; Psalm 145:20; 146:4; 2 Thessalonians 1:9; Ecclesiastes 9:5, 10; 3:19, 20.

3. *Does God ever grow weary?*

Answer: See Isaiah 40:28; 59:1.

4. *Is God easily provoked to anger?*

Answer: See Psalm 103:8; Nehemiah 9:17; Psalm 145:8; Joel 2:13; Jonah 4:2; Nahum 1:3.

5. *Will God retain his anger forever?*

Answer: See Psalm 30:5; Micah 7:18; Zeph. 3:8, 9.

6. *Has God a law?*

Answer: Yes.—Romans 13:8, 10; Matthew 22:36-40; Galatians 5:14; James 2:8; Micah 6:8.

7. *Can God be tempted with evil?*

Answer: See James 1:13.

8. *Does the Bible compare God with the things he has created?*

Answer: See Isaiah 40:12-15, 17, 22, 25, 26, 28; 1 John 3:20; Psalm 104.

9. *Does the Bible teach that God is a creator?*

Answer: See Genesis 1:1; 1 Peter 4:19; Eph. 3:9.

10. *What was God's first creation?*

Answer: His Son, our Lord.—Revelation 3:14; Colossians 1:15; Psalm 89:27; 1 John 4:9.

11. *Who is Jesus declared to be?*

Answer: The Son of God.—Matthew 3:17; 16:16; John 5:20; 3:16; Acts 9:20; Luke 1:35.

12. *Are Jesus and God the same person?*

Answer: A father and a son cannot be the same person. (John 14:28; 1 Corinthians 15:28) Jesus was created and therefore had a beginning; God was from everlasting.—Psalm 89:27; Colossians 1:15; John 3:16.

13. *Was Jesus created long before he was born into the world?*

Answer: Yes.—John 17:5, 24; Philippians 2:6; 2 Corinthians 8:9; Colossians 1:15-17; John 3:13; 6:62.

14. *Why did God create Jesus?*

Answer: See Ephesians 3:9; John 1:3; Colossians 1:15-17.

WE KNELT BEFORE KINGS

"We knelt before kings; we bent before lords;
For theirs were the crowns, and theirs were the swords;
But the times of the bending and bowing are past,
And the day of the people is dawning at last.

"No more shall the kings, for their glory and gain,
Drive the masses of men to slay and be slain;
For the folly and fury of warfare shall cease
When the day of the people brings justice and peace.

"Great day of Jehovah! Prophets and seers
Have sung of thy coming these thousands of years.
On the wings of war's whirlwind God's judgments fly fast,
And the day of the people is dawning at last."

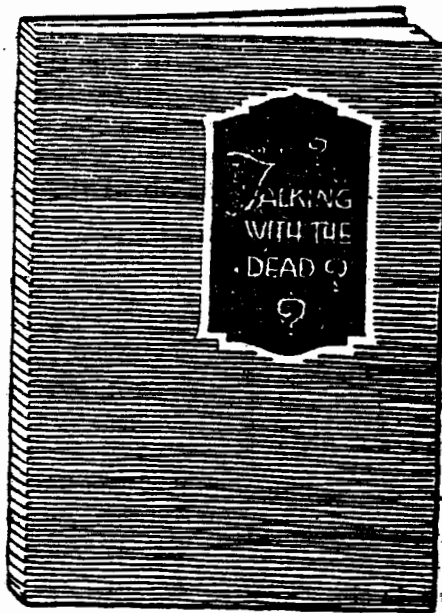
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