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The Golden Age

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No. 8

LABOR AND ECONOMICS

Another Labor Conference

THE October labor conference went to pieces because three interests, labor, capital and the public, met together as interests, and from the first they each seemed to conclude that the most important mission of each party was to hang together, no matter what happened to the conference as a whole. We all see now that this was not the right way to go about it. There were some mistakes, too, in the personnel. It inflamed the situation to have Elbert H. Gary among the representatives of the public, while the steel strike was in full swing, and the larger mass of unorganized labor, including the professions, was not represented at all.

Now the President has issued a call for another conference whose mission it will be, not to deal directly with any condition which now exists, but to search out the underlying causes, and propose a remedy that will avoid such deplorable conditions as those which have recently confronted the country.

The object of the conference is declared to be to determine some plan by which "our industries may be conducted with such regard for justice and fair dealing that the workman will feel himself induced to put forth his best efforts, that the employer will have an encouraging profit, and that the public will not suffer at the hands of either class."

The new conferees, of whom there are seven, include ten government officials, such as cabinet officers, governors and other public officials, two lawyers, two college presidents, a railroad official, one merchant and one fisher. It assembled in Washington, December first. It is expected to act in an advisory

capacity, as to legislation suitable to meet the present industrial situation.

The American Federation of Labor, apparently impressed with the thought that labor, organized or unorganized, is wholly unrepresented on the new board, has issued a call for a general conference at Washington, on December thirteenth, stating that labor is now confronted with dangers so grave as to affect the very foundation of its structure.

British Labor Policy

THE British Government has announced a very liberal labor policy. Among other things it proposes the state purchase of mines, the social amelioration of the mining areas, admission of the miners to councils for the reorganization and economical management of the mines, and a free career to mining talent.

It also proposes an inquiry and propaganda to promote increased output, the development and control of electric and water power supply, a national maximum forty-eight hour week, a living wage for all workers, workers to have a voice in working conditions, workers to have a financial interest in their work, provision to be made for workers in periods of unemployment, the workers' homes to be made healthful and their transport expeditious.

Lloyd George, the British Premier, in announcing the British labor policy, made an utterance that is remarkable for its breadth of view. He said:

"Millions of gallant young men have fought for the new world. Hundreds of thousands died to establish it. If we fail to honor the promise given to them, we dishonor ourselves."

"What does a new world mean? What was the old world like? It was a world where toil for myriads of honest workers, men and women, purchased nothing better than squalor, penury, anxiety, and wretchedness—a world scarred by alums and disgraced by sweating, where unemployment through the vicissitudes of industry brought despair to multitudes of humble homes; a world where, side by side with want, there was waste of the inexhaustible riches of the earth, partly through ignorance and want of forethought, partly through entrenched selfishness.

"If we renew the lease of that world we shall betray the heroic dead. We shall be guilty of the basest perfidy that ever blackened a people's fame. Nay, we shall store up retribution for ourselves and for our children. The old world must and will come to an end. No effort can shore it up much longer. If there be any who feel inclined to maintain it, let them beware lest it fall upon them and overwhelm them and their households in ruin.

"It should be the sublime duty of all, without thought of partisanship, to help in building up the new world, where labor shall have its just reward and indolence alone shall suffer want."

American Labor Ideals

AMERICA has lagged behind some countries in progressive labor legislation; yet a great deal of constructive work has been done, and plans are being tried out which give promise of splendid results, if they can be put into general operation. We mention a few instances which have come to our notice.

The Clark Equipment Company, Buchanan, Mich., has made of its grounds a high-class park. A complete greenhouse equipment, band and band stand, basketball, football and baseball teams and grounds, hospital for employes and families, cooperative store, and shop committees of employes for keeping in touch with the plant management, are features which tend to the promotion of tranquility of mind among the employes. The employes of the Clark Company are encouraged to become stockholders in the company, and when they do so receive special dividends upon their stock, in addition to the regular dividends paid to other share-holders. The Clark company builds and sells homes to its employes at cost of construction.

The Lycoming Foundry and Machine Company, Williamsport, Pa., also has various teams for athletic contests, an orchestra, a sick benefit association, a newspaper, life insurance for all employes, badges for long and continuous service, and a plan of building and selling homes to its employes similar to that used by the

Clark company, and proved equally successful.

The International Harvester Company, Chicago, has tried out a plan of having a House, composed of employes elected one from each department; a Senate, composed of the foremen; and a cabinet and executive, composed of the officers, after the plan of government of the United States. The House and Senate meet weekly, on company time, to discuss working conditions, safety, sanitation, wages, hours and piece work. Any changes must be approved by all three bodies.

The constituency of the House members is so arranged as to make sure that each voter is in personal contact with his representative. In small factories there is one representative to every twenty-five or thirty employes; in large factories one to every 200 or 300 employes. The effort is made to keep the House from becoming oversized and unwieldy, but the men have the utmost freedom in choosing their representatives, as otherwise the company has no way to learn the real opinions of its men.

Grievances in the plant are settled first between the employe and the foreman; or, that failing, between the employe, the foreman and the employe's representative in the House; or, third, between the representative and the superintendent of the plant; or, fourth, in the House and the Senate; or, fifth, by the president of the company. It is found advantageous to employ an executive whose business it is to see that there is no friction at any point in this industrial machinery, which in actual test has been found to work splendidly.

Under this arrangement, the hours of labor have been reduced from fifty-three hours per week to forty-four hours per week, without decrease in production, twelve hour shifts of certain employes have been eliminated, and piece-work rates have been rectified where it was shown that they were too high or too low in competition with other workmen engaged in similar operations. Standards of production, quality and cost, have been fixed for each department and wage dividends, on a fifty-fifty basis, have been paid to the men and the company for increases in production above the standard production. In some cases these wage dividends have run as high as seventeen per cent, paid every other week in cash.

In some factories, production has been speeded up by an arrangement under which eight

ten men working together in a unit compete in production with other similar groups. This is called the group-production system. Bonuses and prizes constitute special rewards for the workers in these groups.

Another method which has been tried satisfactorily is the setting aside of a definite percentage of the net earnings of the company to be divided among the employes in the form of wages. This resulted, in one case, in an increase of fifty per cent in wages to the men.

Fears of Capitalists

MANY of the capitalists of the country seem to have a well-defined fear that no matter what concessions they make to labor, or what effort to ameliorate the workers' social and industrial relations, they will make no progress toward solving the problem of labor's menacing attitude, and therefore they are talking about plans for resorting to force.

The Merchants' Association, New York, advocates that employes of public utility companies shall be enlisted like an army, so that employes would contract to work for a certain period, during which they could not legally quit or be discharged except as provided for. This looks like inviting a lion to accept a halter made of cotton twine.

Frank A. Vanderlip, former president of one of New York's greatest banks, is of the opinion that the nation can not permit the creation and growth of large labor combines which, if left unchecked, "would be in a position to threaten the foundations of American social and economic life". We have to "permit" many things.

General Miles, now eighty-three years of age, does not like the look of the way things are going. In an address at Shawmut Congregational Church, Boston, November eleventh, after remarking that in China the laborers work seventeen hours for five cents worth of rice, and in Japan earn but fifteen cents a day, with eighteen cents a day in the factories of Tientsin and twenty cents as a day's wage in Russia, he declared that if the state does not take suitable steps to curb labor agitators, he is in favor of resorting to mob violence.

Other capitalists, studying the question, and noting that limitations have been put upon combines of capital, propose the limitation of labor combines, but a thing which they fail to mention in this connection is that the laws

accomplished little in preventing the combines of capital, which is combined now in as great strength as ever before in history.

Still other capitalists acknowledge that we do have large corporations, and declare frankly their belief that the countries where the development of large corporations has gone furthest are those countries where the people enjoy the highest wages and the best conditions of life. They even go further and declare that, as a rule, the smaller the business is, the more unsatisfactory the wages and working conditions.

Labor Extremists

IT GOES without saying that labor has in its camp many men who are very foolish; men who think riches can be distributed without being produced, and who have the idea that somebody has a great, deep, exhaustless treasury out of which fabulous wages could be paid forever without anybody putting anything into the bag; but the average workingman is not a natural born fool and can be depended upon in the long run to act with reason and judgment.

One thing which has disturbed some capitalists is the situation in Australia. There labor has had full control of the states and of the commonwealth itself, and has the most elaborate and elastic system of boards and courts in the world, objects of labor's own creation, but with the continued growth of trade-unions in the commonwealth, the number and seriousness of strikes continue. It seems that the very class that placed the labor statutes on the books ignore them and resort to strikes to gain their ends. This is not fair to the public, to their employers or to themselves.

Another thing which has disturbed some capitalists is the attitude of organized labor toward the proposed gift of Mr. Melville G. Henry, of Tacoma. Mr. Henry is a wealthy man, but in his declining years and in feeble health. He has a coal mine, estimated to be able to produce 1,000 tons of coal daily for a hundred years, and to be able to lay down coal in the towns from Seattle to Portland at four-fifths of the freight rate alone now paid on coal brought in there from Wyoming. He offered this mine, free of all cost, to the labor unions of the Northwest, estimating that it would save \$2,000,000 to the laboring men of that country, but complains that his offer was coldly received, except by one tinmiths' union.

Mr. Henry said that in offering the mine he had hoped to solve some of the problems of labor, because, to use his own words, "most people cannot realize the silent tragedy of the toiler. He does not live, but barely exists in most cases. There is a world full of wealth if managed for all. I feel sure that now, more than ever before in these days of high cost of living, labor should own and control its source of supply of the most important necessities, even to owning its own dairy herds and fruit ranches." These are noble sentiments.

The Public's Interest

WE ARE all interested in this labor problem. It is a self-evident fact that only a savage fights for his own interests regardless of those about him, and there is an obligation owed alike by the employer and the employe, to conduct their affairs so that the community as a whole does not suffer. Senator Edge, of New Jersey, made a wise observation when he said, "Labor is not the employe of capital (only), but of the people at large, of the whole United States, and the people are the employer of capital also".

The membership of The American Federation of Labor is now 4,000,000, but this is only about one-sixth of the laboring force of the United States, so that the other five-sixths have to be considered in these questions. We must not forget that every time a reduction in output is made, some one's standard of living is reduced; and not infrequently this loss is passed on to some class that is not at all organized and is unable to bear it. It has been said, and we think truthfully, that reckless indifference as to whether the shop wheels turn or not is one of the great causes of the High Cost of Living.

We are just getting to the point where the ethics of the labor question is coming to the light. It is a time for thought and effort to do right, and not a time for passion. There was a time when rebates were considered all right; now everybody knows that it was a contemptible piece of thievery. The public is waking up to the principles of *right*. A proposition has just been made to create a permanent industrial board in Washington to regulate industry in the manner in which the Interstate Commerce Commission regulates traffic. We think well of this suggestion. It is so good that it seems late in arriving.

The Senate of the United States, through its

investigation committee, has just recommended an eight-hour shift in the steel industry. This was a step in the right direction. The twelve-hour shift is a barbarism that can no longer be tolerated. Such hours break down the vitality of men and are extravagant even if paid for, because the increased fatigue of the worker is not compensated for by his increased earnings, and cannot be. He is worn out before his time.

So difficult and serious is the labor situation that the Pittsburgh *Leader* solemnly says, "The people of America must go down on their knees and ask for divine aid. We must pray for those who exercise authority that they may be wise and just. We must pray that all of our citizens may be faithful to duty and obedient to law."

It is evident that the laboring people of the world plan its control. In England, in the municipal elections, the labor socialists gained control of thirty-nine out of forty-three districts in London. All the industrial centers were captured by their candidates and they predict that they will control the government of England in the general elections next year.

At this time, it seems to us that those who have been stewards of earth's wealth and power in the recent past can do well to read with great care the parable of the unjust steward who was about to lose his stewardship, and who was commended by his master because he recognized that that time had come, and did the wisest thing he could do under the circumstances. He yielded gracefully to the inevitable, and made himself solid with his former debtors by lightening their burdens. See Luke 16:1-15.

Employment of Soldiers

THE Government has reported that of the 4,000,000 men who were returned to civil life since the signing of the armistice about eighty per cent were taken back by their former employers and only about 25,000 had been unable to secure employment of any kind up to the date of the report, in September. This is a very remarkable showing and indicates great prosperity in the country, with a desire to do the right thing by the soldiers on the part of employers. Occasionally there are disappointments. Not long ago five ex-soldiers robbed a Chicago bank and explained as their reason that they had been unable to get work. Of the 25,000 jobless ex-soldiers 10,000 are said to be in Greater New York.

SOCIAL AND EDUCATIONAL

Love vs. Hate

By Newton T. Hartshorn

IS THERE a wave of hate—a sort of moral influenza, as a result of the war, sweeping over the world? Men have good reason to conclude that war breeds hate and more war and more hate, and earnestly study how to inaugurate some form of control that will stop the periods of murder madness.

Just as the war was breaking out, a great world's peace congress was assembled in Germany; its deliberations were cut short the first day, and its members fled. A few weeks before there was heralded all over the world: "Peace and good will to men"—"no more war, a new era has commenced". A new era had commenced, sure enough! The world is a cage of hawks. How can the doves of peace survive in it unless the hawks are chained?

All must admit that love is the essential quality in peace, and that hate is a quality which invariably causes war—the destruction of human liberty and order. The cultivation of love, even for one's enemies, is the basic principle of Christian philosophy. Even justice, wisdom and power are deficient without it; in fact, love is the very essence of life, and hate the agent of decay and death. We seem to have reached the climax of the principle (or lack of principle) of rule by human force, which only provokes hate unless absolutely just and loving. The machine gun, the rifle, the revolver, the bomb, the bayonet and the boycott are not the agents of effective persuasion, but of irritation, hate and retaliation. The machinery of government is obliged to be constantly augmented by more force in opposition—more hate. The working people are solidly organized against the capitalists; and the employers and the capitalists are solidly organizing against the working people—more force and more force, but no love.

With man's nature unchanged, is there any prospect that organized human government by the use of force can put down all resistance and inaugurate perpetual peace, that insurrections and wars will cease? History forbids any such conclusion. The power of selfishness and

its sequence, hate, can not be put down by human force, although those who have formed the League of Nations, a church and state system apparently, may try it as it was tried by a church and state system during the dark ages and failed.

Collective man's character is fixed—crystallized. Generation after generation of youths, while plastic, under kindly tutoring, molded to a humanitarian spirit, have not retained it. How can the start be made? How get rid of the old environment—the old human nature? Even a great military and police force and an extended judicial system are inadequate to protect fully the property and lives of the law-abiding and the innocent. Predatory nations and gangs plunder and murder worse than was ever known in the dark ages. Robbers in the daytime, on the streets of our populous cities, ply their inhuman calling.

Men have theorized that the race could be educated, trained and evolved to a higher plane, preparing it for the coming of Christ, ready to set up his kingdom. But when could the start be made? Millions of priests and ministers, also religious teachers, following generation after generation, and hundreds of theological schools at work for nearly 2,000 years, and still the wars and the selfishness, the murders and robbery and hate have grown worse and worse! The theory that a clergy class or any other human class can reform the world is forever and finally exploded. Phenomenal, superhuman, divine power, and that alone, can start the new order. The change must be positive and radical. The prayer which our Lord taught his disciples, "May thy kingdom come, and thy will be done on earth as it is done in heaven", indicates to a certainty that the time will be when that change will come. "Man's extremity is God's opportunity". The problem has become so complex that there is no hope that man can solve it. Yet unless it is solved, soon the race will perish in a debacle of murder and starvation.

There can be no question, however, that in due time, when man is ready to admit that he has failed, divine power will take control and stop all human rule by force and all disorder and

crime. This will probably take the form of the temporary physical paralysis of any one who attempts to harm his neighbor in word or deed; and no force will be needed or permitted by either human governments or individuals. That would perfectly solve the problem. The hawks would be chained, and the doves would survive.

Thus gradually the quality of selfishness and hate would be eliminated from all except the incorrigible, those who would not or could not reform. Pent up hate and selfishness in their case being the active agents of decay, they would drop off in death. But those who desire to reform, and those who had a large measure of the spirit of love and obedience, would not chafe under restraint; they would survive and prosper. Gradually the new order, the kingdom of heaven, would begin to be instituted in a natural way. The Scriptures show that this is the way in which our Lord's prayer will be answered in due time, and that then gradually all that have died will return (recreated) from the grave.—John 5: 28, 29.

Pathologists are making astonishing advances in discovering the causes of disease and the means of prolonging human life. They claim that it is not impossible to find some means of preventing the cells that compose the human body, from breaking down. Once that means is discovered, they claim, the problem of endless life is solved. It is well known that loving, happy dispositions conduce to long life; and divine love being so vastly more vitalizing than human love, under the conditions prevailing in the kingdom of heaven on earth we might reasonably assume would be the means of preventing the cells from breaking down.

Scientific attainment along all lines is miraculous these days. Astronomers, geologists, electrical specialists and chemists note in their line great changes pending in the physical world, changes destined to increase vastly the vital energy which can be evolved from matter or by it, and to remove certain devitalizing agents that have for thousands of years had an adverse influence on organic life on the planet. In fact the earth has never been completed, and the human race has ever been living under abnormal conditions. But shortly mankind will for the first time experience what living on a completed earth under a perfect divine government will be—"the desire of all nations".

Only a little more than 4,000 years ago the polar ice caps on the planet aggregated approximately 11,000,000 square miles, devitalizing human life almost to the point of extinction. Ice is a very great devitalizing agent. The polar ice caps now aggregate only about 7,000,000 square miles. Normal conditions are asserting themselves; and the ice will, in the not distant future, all be gone. Then the meteorological conditions on the planet will become perfect.

The clouds are dark and threatening now all over the world; but the sun is shining behind them. "Seek righteousness, seek meekness: it may be ye shall be hid in the day of the Lord's anger." "My determination is to gather the nations, that I may assemble the kingdoms to pour upon them mine indignation, even all my fierce anger; for all the earth [selfish social order] shall be devoured with the fire of my jealousy [not literal fire]. For then [after this] I will turn to the people a pure language [the truth] that they may all call upon the name of the Lord to serve him with one consent." (Zephaniah 2: 3; 3: 8, 9) "And God shall wipe away all tears from their eyes and there shall be no more death, neither sorrow nor crying, neither shall there be any more pain; for the former things are passed away. Behold I make all things new."—Revelation 21: 4, 5.

College Boy Police

ACCORDING to *School and Society*, when the Boston police left their positions the following invitation by Professor E. H. Hall, of the Harvard physics department, appeared in the *Boston Herald*:

"Come back from your vacations, young men; there is sport and diversion for you right here in Boston!"

President A. Lawrence Lowell, of Harvard, issued this bulletin:

"In accordance with its traditions of public service the University desires in a time of crisis to help in any way that it can to maintain order and support the laws of the Commonwealth. I therefore urge all students who can do so to prepare themselves for service as the Governor of the Commonwealth may call upon them to render."

Later he stated:

"Students willing to volunteer for police duty are asked to report to Superintendent Pierce. The fact should be emphasized that these volunteers are reporting simply as citizens of the Commonwealth in response to a call from the Governor."

MANUFACTURING AND MINING

Drilling and Pumping Oil

By Harry P. Weaver

PETROLEUM from Sicily was burned in the temples of Jupiter before the beginning of the Christian era, and petroleum from the Caspian Sea deposits about Baku has been the source of the "holy fire" burned for centuries in the temples of India. The famous petroleum spring at Cuba, N. Y., was mentioned by missionaries nearly three hundred years ago, and petroleum was sold as medicine down to the time of the discovery of the process of refining the crude oil so that illuminating oil could be obtained from it.

The first efforts at obtaining petroleum in the United States were confined to collecting the oil from surface springs. Nine barrels were thus obtained in Western Pennsylvania in the spring of 1838 and were sold promptly in New York City for \$275.19. The first oil well was sunk at Titusville, Pennsylvania, by Col. E. H. Drake, and at a depth of 69½ feet he struck a vein of oil which rose to within ten feet of the top of the well. During the next four months the well produced 2,000 barrels, which sold readily at \$20 per barrel. The production of all wells in the country amounted the next year to 500,000 barrels; in ten years it had risen to 5,000,000 barrels; in 1880 it was 26,000,000 barrels; in 1900 it was 63,000,000 barrels; four years later, with the advent of the automobile, it was 120,000,000 barrels. Oil and gas were formed similarly to coal. Copious vegetation, replete with carbonic acid gas, was laid down in deposit, covered and confined, and subjected to decay, subsequently formed oil and its fumes—natural gas. Gas, however, is not the fumes of oil alone; for it is frequently found in regions independent of oil.

No longer in use is the four-cornered fully closed-in tower, but the great, convenient, seventy-four feet standard rig; no longer the diminutive stem, bailer, jars and bits that, conveniently bound together, constituted only a fair burden for the back of the husky tool dresser; but great massive tools that require to be handled by power cranes; no longer the twenty feet of hole per shift of twelve hours,

but one hundred twenty feet in the same time; no longer the 69½ foot hole but an average, in Pennsylvania, of 1,800 feet.

Here, for example, is a brief history of Bradford Oil Company's No. 46. The first forty feet were put down 16 inches in diameter through loose earth, mud and soft slate; and a wooden box or tube, called the "conductor box", was inserted to the bottom, to keep back the foreign matter from the hole. This first hole is called the spudding hole, because drilled by what is called the "spudding" process.

At the bottom of the spudding hole a hole 8½ inches in diameter, called the "big" hole, was started and continued through all the water-producing soils and rocks to a depth of 350 feet. Here the well was cased with iron pipe 6½ inches in diameter, set firmly on the bottom and reaching clear to the surface.

At the bottom of the big hole another hole 6½ inches in diameter was started and sunk to the bottom of the oil-bearing strata. The oil sand of this particular well was 75 feet thick, of a rich brown color, very soft and fine, and highly productive of oil and gas.

The drilling of an oil well is a man's job; it is no job for a seller of hair ribbons and perfumery. The old-style method of drilling was by use of a steam engine; and these are even yet largely used, though some prefer the gas engine because it stands the strain better. The heavy tools are laboriously lifted to a generous height and then suddenly dropped back into the hole. Between lifts the engine speed is greatly accelerated, because it has nothing to do. Therefore the engine room of a drilling rig is an exciting place.

Shooting the well is no ladies' job either. The old-time oil-well shooter travelled at night in a buggy, carrying with him enough nitro-glycerine to shoot his next well. If the horse ran away or if he struck a rough spot in the road, they filled in the spot the next day and sent another man the next night with another load. When No. 46 was shot, they touched off 100 quarts of nitro-glycerine in the oil-bearing strata at one time. Nobody has ever been down a hole to see just what happens under such

circumstances, but the effect seems to be to loosen up things somewhat and start the oil to flowing, if there is any to flow.

After the well is "shot", tubing two inches in diameter, properly equipped with "working barrel" and "standing valve" at the bottom, is inserted to the bottom of the hole. How would you go about it to put an iron pipe a third of a mile long down a much larger iron pipe? Would you first screw the pipe together on the ground and then lift it up and drop it into the hole? If you tried that plan would you not be afraid it would bend a little before you got it straight up in the air?

Or would you just hold the pipe down the well with one hand and screw in the lengths one after another with the other hand, gradually letting down the pipe until you struck bottom? But suppose you got tired and dropped a few lengths or a quarter of a mile of pipe down the well? How would you get it again? Well! You can let the oil man worry about that. He knows how to do it, and without losing any of his precious oil, or even any of his precious gas. But it is no job for one of the weak sisters.

After he has his tube down the well the oil man puts in his rod, equipped with another sort of valve, and this, too, has to reach all the way from the top of the bottom of the well. Then he is ready to pump. This rod is called the sucker rod. By means of surface rods any number of sucker rods can be operated from a single power house conveniently located with reference to the group. Compressed air is also much used for pumping, and has some advantages over any other method.

The average price of Pennsylvania crude petroleum has been about \$2.50; now it stands at \$4.25 per barrel, with small probability of a decline. The average production per well is today approximately half a barrel per day. A small operator with twenty producing wells has a very comfortable income, while one with fifty wells has the foundation for a fortune. A gusher may make a millionaire over night, but Pennsylvania has probably had its last great gusher.

The first place where petroleum is mentioned in the Bible is in the account of the construction of the Tower of Babel. There the partially evaporated fluid is referred to as "slime".

"And they had bricks for stone, and slime

had they for mortar." (Genesis 11:3) The first battle of history occurred amid the "slime-pits", the oil-bearing strata at the head of the Dead Sea. "The vale of Siddim was full of slime-pits; and the kings of Sodom and Gomorrah fled, and fell there".—Genesis 14:10.

Curiously enough, bricks cemented together with dried petroleum have been found in large quantities in Nineveh and Babylon, and the oil deposits in the valley of the Dead Sea are now being developed. It was these oil-bearing and sulphur-impregnated shales that supplied the "brimstone and fire" which destroyed Sodom and Gomorrah. (Genesis 19:24) We are glad to have the prophetic assurance that those people of Sodom, destroyed so many years ago, shall yet "return to their former estate" (Ezekiel 16:55) on the borders of the inland sea where they once lived.

Quicksilver Scarce

PERSONS owning thermometers can look at the quicksilver in the bulb and comfort themselves that there, at least, is something that is not lessening in value. Those needing thermometers should take note that quicksilver is worth \$1.27 a pound and going up, because it is becoming scarce.

Quicksilver is one of the semi-precious metals. In the United States it is found at New Almaden, California, and comes from Almaden, Spain, where it is separated from the sulphur in cinnabar ore, by a current of hot air arranged so as to burn the sulphur and leave the mercury, or quicksilver, in the metallic state. The tendency of quicksilver to unite with gold into an amalgam causes the chief use of the metal beside the familiar one in the thermometer. The mercury is spread over a copper plate, over which the gold ore is washed; the gold from its weight comes in contact with the plate and is promptly amalgamated with the quicksilver, from which it is separated by heat. Another familiar use is as a medicine when rubbed to a fine globular powder with rose water, under the name of blue mass. Among the chemical compounds is bichloride of mercury, made by heating a mixture of mercuric sulphate and common salt, which is sometimes taken as a poison, and results in painful and lengthy suffering and in death.

Quicksilver is also essential to the manufacture of high-class mirrors.

FINANCE · COMMERCE · TRANSPORTATION

Foreign Exchange

THE unfavorable condition of foreign exchange and its effect on foreign and domestic trade and on manufactures and agriculture have been much in evidence in the newspapers; but it might as well be so much Greek, for some of the public who do not understand enough about foreign exchange to know what is wrong.

Foreign exchange is the medium of exchange for business between, for example, this country and England. It is not the exchange of money, for currency or gold is employed as little as possible, but is such an exchange as takes place when one dealer pays another by check; no money passes, but a transfer of credit is made on the accounts of a single bank, if both dealers use the same bank, or between two banks if they employ different banks. Foreign exchange employs paper or drafts, something like checks, called bills of exchange.

A transaction in foreign exchange requires four parties; a merchant, M, and a broker, B, in this country and a merchant, BM, and a broker, BB, in England. Merchant M sells goods to merchant BM. Instead of sending the bill direct, merchant M sells it, with a draft on BM, to broker B, who is buying such bills constantly. This gives merchant M the money and gives broker B a credit payable from England, which becomes part of his fund of like credits. Broker B does not collect direct from British merchant BM, but send the bill with draft attached to British broker BB, who presents the draft to merchant BM, who pays the bill to BB. This completes the transaction. Like transactions where merchant BM sells goods to merchant M are executed in reverse order. The grand total of transactions is larger on one side than on the other, and the difference is periodically settled by shipments of gold. A person wishing to remit to England without having sold goods can purchase a bill of exchange out of the fund of credits of broker B and mail the bill of exchange direct to England, where the receiver collects the money from broker BB.

Ordinarily a dollar is worth 100 cents in gold, and a British pound is worth 486½ cents in gold.

The pound is now worth only about 40½ cents in gold. Foreign exchange is figured so that an equal amount of gold is represented in the money of both countries. Some bills of exchange are cabled across, and there is no interest to be taken into account, but bills payable in thirty days, or other period, take into account the interest payable for the tying up of the funds for that time. Other items carefully figured in are insurance, freight, packing, commission and wear of the gold coin, as though it were shipped. If the pound is fluctuating in value, it may go up or down, during the period; and the broker selling the exchange figures the risk in as part of the cost of the exchange. Quite a high charge is made on time bills of exchange for remittances to countries where the local currency is making wide and frequent fluctuations.

The value of the exchange of different countries is published daily in financial pages of the newspapers, and exchange bankers are continually kept advised of changes through the day. The value of exchange for France and some other countries is figured as so many francs for 100 cents in gold. If a country's currency is inflated it will be worth less cents to the franc, lire or other unit, and will require more units to equal 100 cents in gold.

Another factor produces fluctuations in exchange: Exchange when bought and sold by the bankers becomes in effect a commodity and subject in price to the law of supply and demand. If, for example, there are twice as much goods shipped to France as are shipped from France, French merchants will owe more than they are able to pay without the bankers' shipping gold. French merchants having bills to meet for goods received will compete for the available exchange, and will bid the price of exchange up, so that they will offer more francs for 100 cents in gold than the local value of the franc would warrant. This amounts to paying more than the billed price for the goods, makes the goods cost more, reduces the profits of the French merchant, and hinders him from ordering goods from America, on which he may lose money. If there is too great a "balance of trade" in favor of this country, and the foreign

merchants are unable to pay the balance with bills based on goods shipped by them, or with gold, the trade between the two countries is reduced to the figure where the imports and exports and the corresponding bills of exchange balance each other. Each country has a certain stock of gold, most of which is needed to sustain the value of the local currency, and part only can be shipped to pay for bills of exchange. The government cannot afford to permit too much gold to be sent out of the country, or the currency would become disorganized and, the gold foundation being removed, may drop to a very low figure or become subject to wild fluctuations, especially if the government prints an excessive amount of paper currency not based on gold, to take the place of the gold which has been shipped away.

In extreme instances when the scarcity of exchange is excessive and cannot be overcome with counter shipments of goods or gold, as at present between this country and Europe, the discrepancy can be overcome by this country's loaning Europe amounts enough to balance the unavoidable difference. Europe pays this country out of the money loaned, and securities, on account of which it was proposed to loan credits of from one to five billion dollars to Europe in order to keep trade going there and here.

If the matter cannot be balanced up with goods, gold or loans, foreign trade has to fall in volume and become equal between the countries. In this country this would cause the decline of the great prosperity in manufacturing, mining, agriculture and trade enjoyed since the early summer of 1919. The consequences would be too serious to be readily invited—such economic, industrial and social effects as flow from factories wholly or partially shut down, men out of work, and the increase of poverty, discontent, unrest and of revolutionary sentiment. The effect would be felt both sides of the ocean and would be serious. It would not be properly remedied by turning over the management of affairs to men who did not understand the intricacies of commerce.

If the balance can be restored between the countries, the value of exchange will rise to its normal figure. Rising exchange stimulates trade, because merchants deal under the opposite risk of falling or fluctuating exchange, and have the same chance to make money that a local dealer has in a rising market.

The problems of commerce and exchange are liable to become too great for even the experienced minds that are working upon them. They are part of the conditions that were foretold by Christ, when he said, "There shall be upon the earth distress of nations with perplexity," (Luke 21:25) and when the old Hebrew prophet said, "That they may do evil with both hands earnestly, the prince [profiteer] asketh and the judge [ruler] asketh a reward [graft or honor]; and the great man uttereth his mischievous desire [for a share of the spoils]; so they wrap it up [arrange it]; the best of them is as a brier; the most upright is sharper than a thorn hedge; the day of thy watchman and thy visitation cometh; now shall be their perplexity."—Micah 7:3, 4.

Pig Iron Hard to Buy

WOULD-BE buyers of iron are reported to be finding it hard to get. Several factors look toward some rise in the price of pig iron, such as the strikes affecting iron, steel, coal and coke, and the huge demands of business; and furnace men are unwilling to sell much iron at present prices, when the possible artificial scarcity may send the price up and cause a relative loss on iron sold now. Buyers are eager enough to order the metal, but sellers prefer to wait. The prosperity in the pig iron business is an index of prosperous conditions for some months to come; especially is this true when a rising tendency in prices show an unsatisfied demand, and more business going on than can be supplied with iron.

Aviation by Dirigible

DURING the World War a German dirigible flew from Bulgaria practically the whole length of Africa and return without mishap. Some of the Zeppelins were 800 feet long, with speeds of 80 miles per hour, and carrying capacity for 500 passengers. It is believed that in this type of machine lies the future of aviation as a field for legitimate transportation.

The dirigible can be built to fly around the world without landing, can stop for repairs in mid air, can descend slowly in a fog, or can rise above fogs or storms if desired. The airplane does not have these advantages, and engineers are now seriously considering the establishment of aviation lines in which dirigibles will be used exclusively.

POLITICAL—DOMESTIC AND FOREIGN

Nationalism in Russia

A WIRELESS dispatch from the Russian Republic claims that two thousand industrial establishments have been nationalized by them, or about eighty-two per cent of all the industries in the country. It is very difficult to obtain from the daily press any adequate idea of what the Russian people are trying to do; and perhaps the newspapers themselves do not know, and are contenting themselves with raising a general howl in lieu of giving out real information on the subject. It looks from the above dispatch as though the Russians are trying to work out the problem of what is called Nationalism. In 1897 the Nationalists put forth this claim:

"The combinations, trusts and syndicates, of which the people at present complain, demonstrate the practicability of our basic principles of association. We merely seek to push this principle a little further and have all industries operated in the interest of all, by the nation—the people organized—the organic unity of the whole people.

"The present industrial system proves itself wrong by the immense wrongs it produces; it proves itself absurd by the immense waste of energy and material which is admitted to be its concomitant. Against this system we raise our protest: for the abolition of the slavery it has wrought and would perpetuate, we pledge our best efforts."

While it has some favorable points, Nationalism as a whole is quite impractical. Although Nationalism does not, like Communism, directly threaten the destruction of the family, its tendency would surely be in that direction. Among its advocates are many broadminded, philanthropic souls, some of whom have helped, without hope of personal advantage, to found colonies where the principles of Nationalism were to be worked out as public examples. Some of these colonies have been utter failures, and even the practically successful have been forced to ignore Nationalist principles in dealing with the world outside their colonies; and, as might be expected, they have all had considerable internal friction.

Several colonies on this Nationalist plan have started and failed in the United States. One of the most noted failures is that known as the

Altruria Colony, of California, founded by Rev. E. B. Payne, on the theory "One for all and all for one." It had many advantages over other colonies in that it picked out its members, and did not accept all sorts. Moreover, it had a Lodge form of government of very thorough control. Its founder, giving the reasons for the failure, in the *San Francisco Examiner*, said:

"Altruria was not a complete failure; we demonstrated that trust, good will and sincerity—which prevailed for a part of the time—made a happy community life, and on the other side, that suspicion, envy and selfish motives diabolize human nature and make life not worth while. We did not continue to trust and consider one another as we did at first, but fell back into the ways of the rest of world."

What some people demonstrate by experience others know by inductive reasoning, based upon knowledge of human nature. Any one wanting a lesson on the futility of hope from Nationalism while selfishness still controls the hearts of men, can get his experience cheaply by boarding for a week each at three or four second-class "boarding houses".

About September first, General Maurice, the great London military critic, said in the *New York Times*:

"The only hope I see of overcoming Bolshevism by force of arms is through a long, slow process of exhaustion. That process is at work, and will continue to work as long as we continue to cut off supplies of food and munitions from the Bolsheviki and furnish their opponents with both; but it will not be rapid and it will be costly."

Maybe we are not as wise as General Maurice. Certainly, if what he seeks to overturn is what has been tried several times without success in this country under the guise of Nationalism, it is far more likely to overturn itself than to be overturned by force. It takes some people a long time to learn that the one sure way to bring great success to a difficult cause is to persecute it. Persecution causes investigation, and investigation of a new thing is more likely to bring to light its good points than its defects.

So deep-seated are the laws of constitutional selfishness, and so certain are their operation that, if all the rich were dead today, and their wealth distributed pro rata, those laws would

within a few years reproduce the very conditions of today. And any system of laws that the majority of men might enact, which would deprive men of the opportunities for exercising their acquisitive and selfish propensities, would sap the life of progress and rapidly turn civilization back toward improvidence, indolence and barbarism.

The only hope for the world is in the kingdom of our Lord Jesus Christ, the Millennial kingdom. It is God's long promised remedy, delayed until its due time, and now, thank God, it is nigh, even at the door. Man's extremity will be God's opportunity, at a juncture when human ingenuity and skill have exhausted themselves in seeking relief without avail. "The desire of all nations shall come."

Uncle Sam's Boys Abroad

THERE is an apparent difference of opinion between the Congress and the executive department of the Government respecting the places in which United States troops may be used. Congress alone has the power to declare war; yet the Secretary of War holds that the President alone can determine where United States troops are to be used, and that no authorization for the use of United States troops in Siberia was needed. If the President or the Secretary of War can legally place troops in Siberia they would seem to have equal rights in Mexico, Canada, Japan, China, England, France or elsewhere, actually producing a state of war to which Congressional sanction would be a mere form. The Constitution evidently did not contemplate this, and Congressional leaders, led by Senator McCormick of Illinois, are now protesting against the further use of United States troops in Europe or Siberia without instructions from Congress. The Versailles treaty with Germany provided that American troops shall be maintained in Europe for fifteen years. The League of Nations, if adopted, would have legalized this.

The pressure for return of American soldiers from Siberia was hastened by the flogging of Benjamin Sperling, a Brooklyn soldier, by Cossack chiefs in Eastern Siberia who are nominally responsible to Admiral Kolchak, the ruler pro tem of Western Siberia, but who are actually mere instruments of Japan on her westward march into Siberia. The Kolchak Govern-

ment has apologized for the outrage; and the Japanese Government is expected to do so, as it is believed to have been the more responsible. The American troops in Siberia are understood to be under instructions to stay there but not to fight.

There is no doubt that we are at a place where the policy of our Government must be definitely fixed respecting European affairs, and especially the use of our soldiers in connection with those affairs. American forces in the Adriatic, acting under the general orders of the British Admiralty recently drove out of Tran, Dalmatia, Italian troops that had been landed there in the attempt to seize the port without the consent of the Paris conference. This brought upon us the displeasure of many Italians who naturally blame us for depriving them of one of the things promised to them in the secret treaty under which they entered the war. They cannot understand why their secret treaty should be set aside while the Japanese secret treaty respecting Shantung is considered sacred.

Concerning the Government's recently announced purpose to send 7,200 men to France to replace troops about to return, and the further announcement that some of these troops would probably be used in Silesia (on the borderland between Germany and Poland) in connection with the voting about to take place there as to whether Silesia is to be included in the new Poland, Senator Moses, of New Hampshire said:

"The orders for our troops to go to Silesia are simply carrying out the general scheme adopted by the President at the Peace Conference of making the United States a party to all the internal disputes of Europe. If the treaty should be ratified in its present form, this would be an everyday occurrence."

We know that at heart our President does not believe in the United States concerning itself with the Silesian coal mines or other strictly European affairs. We remember that he was elected the last time because he kept us out of the war. He stated just prior to that reelection that it is "the fixed and traditional policy of the United States to stand aloof from the politics of Europe", and gave expression to the fear that the success of his political opponents would mean "that we shall be drawn in one form or another into the embroilments of Europe."

We believe that it is good governmental policy

for the United States Government to avoid entangling itself in the border disputes and other local affairs of Europe and European countries. We have a reason for this. It reads: "Let none of you suffer as a busybody in other men's matters." (1 Peter 4:15) It is quite as true in national life as it is in private life that most people have sufficient to occupy them in attending to their own business properly; and if they give sufficient attention to the business of others to be competent to meddle in their concerns they are surely neglecting to some extent their own affairs. One of the best ways to help along the Golden Age is to mind our own business and encourage others to do the same.

Belgium Getting Stronger

AS BELGIUM was the first country to suffer in the war so it is one of the first invaded countries to show signs of recovery. While it is a great industrial country, yet it is also one of the most closely tilled countries in the world. Its agricultural interests did not suffer to any appreciable extent during the war or since. The farmers received fabulous prices for their products, and still receive them.

The coal mines of Belgium were undamaged by the war and are now said to be producing eighty-four per cent of their pre-war total, which permits the export to France of 300,000 tons per month and considerable quantities to Holland, Switzerland and Italy.

During the war one-half the blast furnaces were destroyed and half the remainder were damaged, so that at present only one-fourth of the blast furnaces that were in operation in 1914 are in blast now.

Clearances through the port of Antwerp are said to be about one-third what they were before the war, and this presumably represents in a fair way the general condition of the country.

The transportation situation is in pretty good shape, the Germans having returned the rolling stock which they carried away, together with much other railway equipment. Passenger travel is about the same now as before the war.

Hundreds of the great Belgian factories are still idle, and a great many of the old employes of these factories have been lured to France by the higher wages. Repairs for the factories are difficult to obtain, and in many cases their owners have been ruined and are unable to re-

gain their former business. Full recovery will entail a long, hard fight.

The Belgian Government is doing the right thing by farmers whose lands were within the fighting zone. These lands are being leased to the Government at five per cent of their pre-war value, the Government guaranteeing to return them to their owners in a few years' time in as good condition as before the war.

Full recovery of the country is impeded by the peanut politics of the clerical party, which, in the effort to retain its hold as the majority party of the Government, is trying to discourage the use of the French language, by which the Belgian people have hitherto kept in touch with the progress of the world.

The value of Belgian property destroyed during the war is estimated at \$7,000,000,000, or about \$1,000 for every man, woman and child in the country. The national debt is now one-half that amount. There is a plethora of paper money, and prices are sky-high.

Though Belgium is so small, being only about the combined size of New Jersey and Delaware, yet its population is equal to that of the whole of New England; and its rivers, although they are short, are so important that fifteen of them have been canalized. These canals are all in use.

The glory of Belgium is in its agriculture, the Belgians being universally considered the model farmers, or, we should say, gardeners, of the world. Nearly all the farm work in Belgium is done with the spade, and the whole land is one vast garden. Every farm is fully stocked, but the cattle are not turned out to graze. They are fed on green crops, arranged to come forward in regular succession. Every particle of liquid manure is collected in a tank sunk in the floor of the cattle shed. It is these liquid manures that have made Belgium the garden spot of the world.

Belgium seems to be the one country which, having at first accepted the Reformation doctrines, was driven by persecution back into the Roman Catholic Church and has since remained there, with apparently no desire to again look into "the perfect law of liberty". (James 1:25) In our opinion the great war and the present struggle of the clerical party to maintain itself in power will result soon in a real and great Reformation in Belgium. And we think, too, that this Reformation will make itself felt in every part of the world.

European Food Situation

FROM the signing of the armistice to the end of June, 1919, Mr. Hoover, the world food administrator, sent relief foods amounting to \$770,000,000 to twenty-one European countries. Without this food the people of Europe would literally have been starved.

Europe paid for the food, and paid high prices for it. American bacon sold to the Germans at as high as \$1.60 per pound. At present the warehouses of northern Europe are packed with food of all kinds, which is in danger of spoiling because there is no market for it. It is not that the Europeans do not want the food, but they have not the money to pay for it. Mr. Hoover estimates that to release this food to the hungry nations that desire it would require a credit of \$4,000,000,000. But credits to a Europe that is virtually bankrupt and facing revolution, do not fill the professional American financier with any special enthusiasm.

In August of this year, in the city of Chemnitz, Germany, ninety citizens and soldiers were killed, and two hundred and fifty wounded, in food riots in which the famished rioters killed the horses of the soldiers and divided their flesh among the people.

An unexpected reversal of the usual experience occurred when the relief expedition tried to sell flour in the southern part of Russia. They found that local flour, scarce as it was, was selling in the open market for about two-thirds that asked for the American flour, and were obliged to take it elsewhere to dispose of it.

Universal Training

UNIVERSAL military training has been proposed as a convenient method of providing a trained soldiery for the protection of the country in case of future wars. Plans for this vary from the Swiss plan of six months training spread out over a period of eight years, to the so-called West Point plan of requiring one year's continuous training for all youths of eighteen, military court martials for all violators of military law, and organization into an army reserve at the close of the period of training. It is conceded that universal military training would save the lives of many men in case of war and that it builds up the physique.

In New York State, under the Slater act, passed in 1916 and amended in 1917 and 1918, all boys in the state above the age of sixteen

years, and not over nineteen years of age, are required to report for military training "not more than three hours in each week" for forty-one weeks in each year. In New York City the time spent in training is one and one half hours per week, including the use of arms, disciplinary exercises, close order drill, skirmishing, signaling, teamwork, personal hygiene, sanitation, first aid, and military customs. Schoolboys are trained in the afternoons, and boy laborers after 5 p. m. Employers are required to see that every boy they take into their business is registered for training.

The movement toward universal military training is a natural outcome of the World War, and yet it was the universal military training of Germany that plunged the world into the war. The Prince of Peace will have a more effectual method of preserving peace than training everybody to fight. There is always the fear that if you train people to fight, they will sooner or later fight whether it is necessary or not. "In his day shall the righteous flourish; and abundance of peace so long as the moon endureth." —Psalm 72: 7.

Ten Million Under Arms

CHINA is said to be contemplating a system of universal training which would give her at all times ten million men under arms. We would suppose that China would have learned something from the experiences of Europe; but perhaps it is a little too early for the Chinese to see that their past course has been the wise one and that their proposed course is most foolish, dangerous to their own peace and to that of the rest of the world. "Blessed are the peacemakers" (Matthew 5: 9), and it should require a large amount of argument to persuade any sensible person that ten million armed men constitute a peace-promoting body.

South African Natives

IN THE general awakening of the world incident to the World War, the natives of South Africa are discovering that out of 94,000 natives who went to the war, 40,000 were left buried, while those who returned are debarred by law from purchasing land, from employment in skilled industrial work, and from church membership in the Dutch Reformed Church. In Bible times the black races were treated like human beings. See Acts 8: 27-39.

AGRICULTURE AND HUSBANDRY

Farming for Nothing

FARMERS are making some money, but when the amount paid by the public is compared with what the farmers get, some of them feel as though they were farming for almost nothing. If a farmer gets \$8.37 for the four and a half bushels of wheat that make a barrel of flour, it would seem that an inordinate profit is made somewhere when the baker sells the same flour into loaves for \$58.70, and the hotel keeper sells the flour in bread slices for \$587.00. It is alleged that the farmer makes no money on his 186-cent-a-bushel wheat. Inquiry is being made where the profit goes between the farmer and the consumer and to find ways of getting the food to the user with less expense.

The miller sells the grain as flour for \$12.75. This makes a charge of \$4.38 between farmer and miller for his service and for transportation, storage, inspection, commissions, insurance, and depreciation in volume. The consumer pays \$14.00, giving the retailer \$1.25 a barrel, which will be acknowledged as a reasonable return. The baker is not rolling in wealth; for most of the \$45.95 he is supposed to get goes out for the labor that distributes the loaf at the doors, and the rest to bakery expenses, including labor, ingredients, repairs, upkeep, insurance, interest, depreciation, waste, and the other unavoidable costs of a small plant.

Perhaps much of the seemingly high cost is owing to the inflation of the currency to double or more what it was in pre-war days, making everything seem double, including expenses and profits. If the figures were reduced to a pre-war basis they would not seem so formidable; for the farmer would receive \$4.19, the miller, \$6.35, the retailer \$7.00, the baker \$29.35, and the hotel keeper \$294, the "profits" not appearing excessive anywhere in this schedule, considering the cost of doing business.

Farmers have to pay double for farm labor, but it costs the farm worker twice as much to live; and so with costs all along the line. Most classes, perhaps, are not much worse off than before the war, but feel worse. Farmers are being driven out of the business, but it is a question whether the forces in operation prior to the

war, lowering profits everywhere, would not have driven many out anyway. When the war started, the country was about to enter a serious depression with hard times for many classes. The hard times have come for many while the country appears prosperous; for the profits from the farmer to consumer in most cases are a disappearing factor. There are good times for some, very excellent times; but they are for those that are in a position to control selling prices, which the farmer is not.

The situation is interesting, perplexing, deceptive, complicated. Workers, dealers, producers seem to be making money, but are not, and cannot locate the trouble; or if they can, they are unable to control it, excepting a favored few. The farmers are beginning to cry out, and the cry is almost like that to come pictured by the Apostle James: "Behold the hire of the laborers [farmers] who have reaped down your fields, which is of you kept back by fraud [the various schemings of profiteers], crieth; and the cries of them which have reaped are entered into the ears of the Lord."—James 5:4.

Seventy Million Acres

NOT THAT land is to be created—that was done ages ago—but over seventy million acres in the United States are to be made available—some time. It is the 74,471,700 acres of wet and overflowed land that Congress is thinking of, with a view to having it reclaimed for farm purposes.

According to the Department of the Interior this vast tract, over four per cent of the total area of the country, can be readily and economically drained and made dry enough for agriculture to flourish. This is an area over twice that of New England, more than the states of New York, Pennsylvania, New Jersey and Delaware, or more than the sum of those of Iowa and Illinois.

Most of the wet land is in the bottoms of the Mississippi and along the Gulf and Atlantic coasts, but the heart of the agricultural section contains twenty million acres. Much of the area is adjacent to centers of population, and a very large part is provided with railroads which

cross or run near the swamps. At the nominal value of \$10 an acre the land is worth \$750,000,000, but once made productive it would, it is estimated, advance ten times in value, to about eight billion dollars. It has practically no population now, but when reclaimed could support 100 persons to the square mile, and would furnish homes for 2,500,000.

The interest manifested in the question is from its possible effect on the cost of food. Once drained, the swamp land is rich and productive of large, valuable crops. Wet lands in the Mississippi valley, South Carolina, Florida, New Jersey and other states, after reclamation, are producing enormous crops. Every farmer knows the worth of bottoms and meadow lands, which are what the swamps become when the water is drained off.

As the amount of land in the country reclaimable through drainage is much greater than that through irrigation, and is richer and more accessible, the belief is prevalent that private enterprise, which hitherto has done most of the reclamation, should be superseded by a great national movement with provision by the government for making useful as much of the seventy million acres as is feasible.

Some of earth's land is desert or barren because it has too little water, and some because it has too much. Either adding or subtracting water may bring a condition like that spoken of by Isaiah, the prophet: "The desert shall rejoice and blossom as the rose; it shall blossom abundantly, and rejoice even with joy and singing."—Isaiah 35:1, 2.

A Willow-Peach

IT IS hard to predict what the Burbanks of the Golden Age may produce in the way of plant development, but many wonderful things have been done, and experiments are going on everywhere to obtain better food for the people. In Orefield, Pennsylvania, William Baer is trying an interesting experiment. He has planted a tract with young peach trees and one "lonely" willow tree. The hope is that the willow through its contact with the peach trees will bring forth a new variety of peach. The experiment is designed to enable the pollen of the peach blossoms to lodge in the blossoms of the willow, with the possibility of the willow blossom becoming fertilized and an entirely new fruit produced. It perhaps would be well

not to name the fruit before it begins its existence; but if it materializes, it might be termed the "willow-peach." The time is coming when millions of agriculturists will be trying every conceivable experiment to improve farm and orchard products; and then out of the myriads of ideas, some are bound to be fruitful and cause the fulfilment of the ancient prediction that in the Golden Age, "Then shall the earth yield her increase."—Psalm 67:6.

Blowing Up the Campagna

FOR miles around the city of Rome, Italy, extends a barren expanse called the Campagna Romana. Lack of water and a stratum of tufa, or porous volcanic soil, have kept the ground from producing anything but grass.

American methods of applying dynamite to increase the fertility of land are being employed. Out of the vast stores of explosives left over from the war, the Italian government is using some to improve the Campagna. Explosives are placed about two feet below the surface and detonated, tearing up the soil and making it cultivable. It is figured that if the entire area were usable for farm purposes enough produce might be raised to feed Rome.

Even if supplying of explosives did benefit a business which made considerable money during the war, and which is alleged to be prepared to promote war as a business proposition, the common people are glad to see that business doing work of a Golden Age variety.

Double Crops of Berries

THE YEAR 1919 produced double crops of berries in numerous localities in the United States where the weather conditions were right, and in the early part of November the second crop of raspberries was on sale in considerable quantities in the New York markets. This is not such an uncommon thing as some of the newspapers seem to think; for when the weather permits, it may happen any year. Those who raised the berries know that the bushes which bore a second crop in 1919 will bear no berries in 1920, the plants having already utilized their 1920 vitality, so to speak. There is a species of strawberry, however, which produces crop after crop throughout the season, and it is not unreasonable to expect that in the near future means will be found to develop the same characteristics in berries of other types.

SCIENCE AND INVENTION

Sun-Spots

AMONG the fascinating, but as yet unsolved, subjects of astronomy are the relations between the sun, the sun-spots, the planets, and terrestrial phenomena. It is obvious that the mysterious orb of day is the source or sustainer of all forms of energy on earth, and it is known that certain solar cycles are paralleled by related cycles on earth. There is a border land of relations between sun and earth which some declare is not understood, and which others affirm has been scientifically investigated.

Even savages appreciate the sun and the sunlight, but it has taken the painstaking efforts of hundreds of astronomers with gigantic and delicate scientific instruments to convey the knowledge that the sun is a most mysterious heavenly body.

The sun is a globe 886,500 miles in diameter, immensely hotter than the greatest heat attainable by even the electric arc, and estimated to be at least 15,000 degrees Fahrenheit. It turns around like the earth; but unlike the earth, the central or equatorial part rotates at a different speed from the polar part—the former in 24.9 days and the latter in 26.4 days at 30 degrees latitude. This goes to show that the exterior, at least, is not solid.

The sun proper, or interior, is liquid, solid, or gaseous—it is not certain which—for at nearly 15,000 degrees it cannot be known how matter acts even under the tremendous pressure at the sun's center. Its average weight is 1.41 times that of water. At the surface—if there be a surface—gravitation would be so great as to be 27.95 times that at the surface of the earth; a woman weighing 100 pounds would weigh 2,795 pounds, and be instantly crushed by her own weight, and a fat man would have no chance at all.

Over the interior of the sun is what all see, the photosphere, a brilliant shining surface of white hot gas, which is constantly boiling or surging up from below in great centers and sinking down around the areas, producing a mottled appearance like rice grains in soup. This is the surface in which sun spots occur.

Above the photosphere is a red hot atmo-

sphere called the chromosphere, which shoots up in mountainous elevations, or erupts for a hundred (or two) thousand miles in monstrous spouts, clouds or plumes, shot up with lightning speed, and evidently borne aloft by the impulsive power of the sun's rays. Such eruptions have been known to shoot out a blast of flame 330,000 miles long in one hour.

Above the chromosphere for a distance of 10,000,000 miles or more extends a soft whitish light called the corona, which at times is uniform about the sun, and at times extends in only two or three directions. The corona seems to be composed of minute molecules of gaseous substances, extremely attenuated, like the wispy tail of a comet. Its appearance is beautifully described as "a complex glory of spaced polar rays, dark rifts, filaments, straight, curved and interlacing, and stupendous synclinal structures with rich, nebulous mottling."

Sun-spots appear to be holes in the photosphere, down which hot outer gases rush at tremendous speed toward the interior. Sun-spots are quite numerous at times, the maximum times coming at regular intervals of 11.13 years, from which they decline in number to a periodic minimum. The years of maximum sun-spots are 1882, 1893, 1904, 1916, 1927, and 1938, and the years of minimum spots are 1889, 1900, 1911, 1922, 1933, and so on. According to this schedule we should be about half way between maximum and minimum; but 1919 has been a year of great sun-spot activity, with one spot of 50,000 by 100,000 miles, the largest yet.

Astronomers have definitely ascertained that the following phenomena vary at the same time as the sun-spots: the feculae or bright spots near the sun-spots; the eruptions and prominences of the chromosphere; the form of the corona from partial shafts or arrowhead form with minimum spots, to a form well developed in every direction with maximum spots; auroras or northern and southern lights; changes in the day and night fluctuations of the earth's magnetic conditions; magnetic storms, which are greatest when sun-spots are maximum; the earth's average temperature, which is least when the spots are most, and varies regularly during the

11.13 year period by from .9 to 1.8 degrees Fahrenheit. "Many other terrestrial changes," says the Britannica, "in rainfall, cloudiness, number of cyclones, panics, prices of foods, famines, growth of trees and even flights of insects have been seriously compared with sun-spots, some showing rather well substantiated periodicity with the spots, and others probably with purely fanciful results."

It is interesting that serious magnetic disturbances arise from shafts of the corona not necessarily arising from sun-spots, but going out in definite directions and rotating with the sun; when such shafts of coronal emanations strike the earth, there arise the great magnetic storms which cause auroras and even destroy the efficiency of telegraph and telephone systems in the areas affected. The sun-spot periods do not agree with any other known periods of the planets or other members of the solar system, and seem to arise from conditions peculiar to the sun, or from some unknown influence quite outside the solar system. It is taught by some who have studied the subject much, that the relative positions of sun, planets, and moon with definite points on the earth, tend to produce such phenomena as storms, earthquakes, volcanic eruptions, and hot and cold spells or "waves".

It seems as though to know the sun would be to know the Creator. As yet we understand very little. The more we learn, the better we understand how mysterious are the sun and the stars, the more we can say sympathetically with the poet-prophet, "God is wise in heart and mighty in strength; who spreadeth out the heavens; who maketh Arcturus, Orion, and Pleiades, and the chambers of the south; who doeth great things past finding out; yea, wonders without number."—Job 9:4-10.

Astronomy at the Equator

THERE are some advantages in studying astronomy at the equator that do not apply at other portions of the earth. Let us imagine two persons, one at the North Pole and the other at the South Pole. There are two nights in each year when the days and the nights are of equal length at every point on the earth's surface. Those nights are approximately March 21st and September 21st. On the night of March 21st those two men are looking at a certain section of the heavens, each at a different part. On the

night of September 21st they are looking at portions of the heavens which could not be seen by them on March 21st because of the bright light of the sun. Again they are each looking at different stars. The inhabitants of the north polar regions and those of the south polar regions never see the same stars. But the man on the equator, by remaining up all night on those two nights, can see all the stars the heavens contain that are visible to residents of our earth. Astronomers make frequent trips to the Andes observatories because of this fact.

To one standing on the equator, or elsewhere at a distance from the poles, the stars seem to rise four minutes earlier each night than the night previous, so that in six months all the stars that were seen on a given night have dropped below the horizon and are no longer visible. This gain of four minutes each day throughout the year brings back into visibility by the end of the year the stars that were visible the year previous. Thus the sun appears to rise 365 times each year while the stars appear to rise 366 times. This appearance is due to the actual revolution of the earth around the sun.

Standing on the equator and looking toward the north the observer will see the north pole star just at the horizon; looking toward the south he will see no such pole star, but will note that "the chambers of the South" (Job 9:9) are relatively empty as compared with the northern hemisphere, within which are located "the sweet influences of the Pleiades" (Job 38:31), the abode of Him that "stretched out the north over the empty place, and hangeth the earth upon nothing." (Job 26:7) Who taught the prophet Job astronomy!

50,000 Feet, Not Miles

IN COLD type it looks badly to read that the professor who is going to signal to Mars expected to rise 50,000 miles in his balloon. (You are right! It was feet, not miles, that were meant) It is believed that flights at a height of 50,000 feet are possible, a plane with a passenger having already flown at a height of 31,800 feet. Only a broken water pipe prevented the flight to 37,000 feet, which was the estimated capacity of the machine.

Passengers on the railways of Colorado frequently faint when crossing the mountains at an altitude of only about 10,000 feet.

HOUSEWIFERY AND HYGIENE

Babies Home and Abroad

THE ideal home is neither a childless home nor one in which there are so many children that the father and the mother can not properly care for them. We believe that in most American homes children are welcome to the extent that their fathers and mothers feel able to give them a fair start in the world. But with the rising cost of living many are wondering whether they can properly maintain numerous additions to their families; and the mothers, upon whom the burden chiefly falls, have recently been considering, in the International Conference of Women Doctors, whether Congress should not be petitioned to make it legal to give medical advice on the subject of birth control. At present it is illegal to impart any information on this subject.

In France the Government is considering what proper measures can be taken to increase the birth rate by increasing the number of marriages. It is observed that there are many more babies this year than last year, as is to be expected; and it is also observed that the babies this year are remarkable for their size, weight and general health.

In England it is noted that since the war the proportion of boy babies to girl babies is as 1,052 to 1,000. This is a remarkable increase, an adjustment of nature which has been observed in connection with other wars, a seeming attempt to replace a part at least of the boys destroyed. England also hopes to accelerate the birth rate.

In Poland the baby question comes up in another form. It is estimated that in this part of the world are not less than a million babies born shortly before or during the war that have never had sufficient food to develop either mentally or physically, and as a consequence are dwarfed and helpless.

A sad feature about the babies in even this favored land is that one per cent of them are mentally defective, one per cent have organic heart disease, five per cent have or have had tuberculosis, twenty per cent have adenoids, enlarged tonsils or other similar defects and same number are suffering from insufficient

food, while twenty-five per cent have defective eyes. In many instances the parents of these children are doing *everything* in their power to help these little ones get a proper start, while in others the parents are wholly irresponsible and indifferent to the welfare of the little beings that owe their existence to them.

The human family is like an old apple tree nearly ready to die, that puts forth an enormous quantity of blossoms but bears little fruit. When the tree was young and healthy the blossoms were fewer, but there was more fruit in proportion to the number of blossoms. In the early days of the human family there were frequently a good many years before any children appeared. In the case of the ten patriarchs from Adam to Noah the first son in the family was born when the father had reached the average age of over 155 years, and Noah was 500 years old when his first child was born.—Genesis 5:1-32.

We are familiar with the suppositions of the higher critics that these years before the flood were not really years, but that they were merely months of thirty days each that were called years. This is just like the higher critics. It would explain how Noah was actually only 500 months old when we thought he was 500 years old, so that his first son was born when Noah was about forty-two. But it leaves us with the interesting suggestion that his great-grandfather Enoch was only sixty-five months old when we thought he was sixty-five years old, so that Enoch's first son was born when Enoch was less than five and one-half years old.

This arrangement of the higher critics made it especially nice for Enos, Cainan and Mahalaleel, father, son and grandson. In this instance, according to the higher critics, there could have been but eleven years and three months difference between Enos and his grandson, and all three of the boys could grow up together. What a cute little higher critic Grandpa Enos must have been at his twelve-year old birthday party, with his eldest son Cainan seated at his right hand, having by that time attained to the ripe old age of six years and seven months, and his

grandson Mahalaleel at his left, already attained to the age of nine months and rapidly growing up into young manhood.

Free Milk to Babies

EUROPE is an illustration of what a milkless diet does to babies. In Italy alone thousands of little ones have died from lack of milk. In Germany and Austria, it is said that children exhibit a growth retarded in development by about the period of the economic blockade and that many children are so undernourished as to be immediate victims of slight disorders that would ordinarily make no trouble.

Not every American city is so provident of its resources of child life as Sacramento, California. The Commissioner of Public Health, Dr. G. C. Simmons, deserves especial honor for his care for the Sacramento babies. He has made arrangements so that free milk will be distributed this winter to families with children under two years of age. Commissioner Simmons says: "Since milk has gone up in price many families are cutting down on their supply, causing children to be sick and undernourished; hence we have arranged to distribute milk free of any charge."

There is no American community that would not have gone to the rescue long ago, if it had been horses or hogs that were undernourished or suffering from epidemic, for horses and hogs possess some value to business, and without them profits might be decreased. If hogs were of no value in business no one would turn a hand if all the hogs in the country had cholera. What counts in these days is how much money can be made out of a thing.

Babies are of value, however, for without grown-up babies no money could be made at all in anything. Babies create the unearned increment of land and buildings; at any rate this increase in value of property is caused by increase in population. The increase in New York State in babies and in assessed valuation of real estate—which largely represents unearned increment—shows that babies increase in economic value from time to time. During the period from 1881 to 1890 the average increase in real estate value per baby was \$1,101. The worth of a baby to business doubled in the period from 1890 to 1917; for with each additional baby real estate values jumped \$2,151.

The reason why babies create unearned in-

crement is that babies grow up and work, and the work makes everything worth more. If the Sacramento babies have fifteen cents' worth of milk a day for three months of winter, each baby would represent an investment of about \$15 a year or \$30 for the two years. But as not over ten per cent of the Sacramento babies will get the free milk, the amount per baby is only \$1.50 a year. This makes a very nice investment of the people's money; for if Sacramento real estate jumps \$80 a year per baby, as it has in New York the last twenty years, the profits on the \$1.50 investment are some \$78.50.

If the unearned increment real estate increase were only a quarter of the total increase, it would be \$20 a year, which would give the still more modest profit of \$18.50 per baby. Besides, the free milk will make more of the babies grow up, which would be pure "velvet", as the business phrase goes. There are few better investments than giving poor babies free milk, though why it should be only during the winter is not clear; for babies have to consume lacteal fluid during the rest of the year, and to give them milk all the time would cost only about \$6 a year when averaged over all the babies, and this would leave a good profit.

Better days are coming for babies. It is still the time when "there is a generation, whose teeth are as swords, and their jaw teeth as knives, to devour the poor from off the earth, and the needy from among men." (Proverbs 30:14) Some day, soon, the Golden Age will be here, and then it will be different; for of that time it is written, "Who is like unto the Lord our God, who dwelleth on high! He raiseth up the poor out of the dust, and lifteth the needy out of the dunghill; that He may set him with princes, even with the princes of His people." —Psalm 113:5-7.

The Osteopath

THE Osteopath tells you that if the body is to function properly every part must be in normal relation with every other part, and that organisms contain within themselves the inherent power to cure disease. He has the idea that if there is anything serious the matter with you and if each one of the principal bones of your body can be used as a pudding-stick to stir up the rest of your anatomy and to get a warm current of blood flowing through your body, you will get well; and you generally

He tells you how a sixth dorsal vertebra, being turned out of its true relationship to the vertebrae above and below it, will involve the vasomotor nerves to the stomach, impair the secretory power of the gastric glands, make digestion slow and incomplete, form gas in the stomach and cause pain and distress of mind, all of which can be relieved by one who knows how to reset the slipped vertebral joint.

He tells you how a slip off a curb stone or any other slight fall may cause a misplacement of the pelvic bones that will cause all the symptoms of appendicitis; and he suggests to you that before you let them cut you open you had better find out whether or not it is necessary. Maybe the osteopath can fix you up in a few minutes so that you won't need to be cut at all.

He tells you how a fall may so affect the spine as to cause cystitis, and when the spine is corrected the bladder trouble disappears. He tells you how the neck vertebrae, getting out of proper relation to one another, may cause distortion of the features and pains in the face and jaw, stiff neck or headaches which only osteopathy can relieve.

In a well authenticated case in hand an infant suffered severely from worm fits. In one of these a worm eight inches long was taken from his nose. In the accompanying convulsions his chest became deformed by the knees being brought up so forcibly against it that one side was depressed nearly half an inch. After thirty-five years, osteopathic treatments removed the curvature of the spine which had persisted all this time, lifted the depressed ribs and the appearance of the chest is now normal.

It is well that we come to reverence our bodies and their Maker. What a wonderful lot of soldiers are those white corpuscles, roaming about through the human system, attacking and destroying invading germs and devouring particles of dead foreign matter! They form a defensive army; and whenever germ invasions occur they rush in great numbers, like trained soldiers, to destroy the invading host. Often many of them succumb in the struggle, and their dead bodies go to form the pus or "matter" so often observed after injuries. They are an embodiment of the healing power of nature; and recovery in infectious diseases is due largely to their activity. The blood contains other germicides and antiseptics, and health returns wherever they are in proper quality and quantity.

There are 310 mechanical movements known to mechanics today; and all of these find representation in the human body. Here are all the bars, levers, joints, pulleys, wedges, pumps, pipes, spirals, eccentrics, wheels and axles, ball-and socket movements, beams, girders, trusses, buffers, arches, cables, columns, and supports known to science. The osteopath believes that if all of these parts are kept in good mechanical working order by the aid of a capable anatomical engineer, good health will persist for a decade or two after the body would ordinarily have gone to the scrap heap.

How wonderfully we are made! The Psalmist, using the human body as a picture of the Body of Christ, says, "I will praise thee; for I am fearfully and wonderfully made: marvelous are thy works; and that my soul knoweth right well. My substance was not hid from thee, when I was made in secret, and curiously wrought in the lowest parts of the earth. Thine eyes did see my substance, yet being imperfect; and in thy book all my members were written, which in continuance were fashioned, when as yet there was none of them. How precious are thy thoughts unto me, O God."—Psalm 139:14-17.

New Oils to Eat

IT LOOKS as though prohibition were turning the liquor men from parasites into business men. The saloon was a waster, but the new brewer and saloonkeeper may prove a dangerous rival to men long established in business; for the wine and liquor men are showing themselves good losers, and are attacking the problem of making a living and turning brains into dollars, with vigor and effect.

In California the grape growers, who were closely linked with the wine interests, were greatly concerned over the destruction of the values in their properties. Now they are finding new ways of utilizing the grape and are turning wastes into useful products.

The wine interests have put the chemist at work. Hitherto the only valuable part of the grape was the juice; but it is announced that the grape has been made to yield an edible oil that is destined to rival the olive, corn and cotton-seed oils as food for man.

One fifth of the tonnage of grapes is pomace, the pressed mixture of skins and seeds, and of this twenty-five per cent is grape seed, or about 100 pounds of seeds per ton of grapes. This is

now crushed, grape oil extracted at a cost of \$1.20, and the residue of the seeds is used for feed for animals. It may not be long before grape oil appears on the grocers' shelves, and a new food product given not merely to the American public, but to the people of the world wherever vineyards exist.

The same chemistry that gives the grape oil looks forward to the production of edible oils from the seeds of tomatoes, pumpkins and other vegetables. Little by little the pressure of necessity is bringing blessings to the people, making life pleasanter, affording variety, and making less intolerable the cost and conditions of living.

A Vegetarian Samson

AT FIFTEEN Dean Duffield Cutting of Seattle stands six feet, weighs 185 pounds, and is a giant in strength, and he has never eaten meat. All day long he handles a 75-pound drill at the shipyard without particular effort.

His strength does not come from animal food; for he breakfasts on a quart of cool water, lunches on three peanut sandwiches, two or three bananas and a pint of milk, and dines on beans without pork, mashed white or sweet potatoes and other vegetables. When a child he saw a picture of a dog retrieving a fowl, and has never cared for meat since.

This boy's experience reminds one of a youth in an oriental court, who insisted on being fed on "pulse" and water, meaning uncooked grain of various kinds, and as a result displayed the best physical and mental development in the court.—Daniel 1:8-16.

Clippings and Articles

FRRIENDS of THE GOLDEN AGE who mail us clippings, will help the editors by observing these suggestions: Do not send whole newspapers or pages; cut the clipping out; if it occupies more than a column, cut the paper around so as to include the parts in other columns, without having parts on narrow strips; if it is on more than one page, paste or pin the columns together at the top of the clipping; on blank spaces in the heading or elsewhere, not down side of clipping, write legibly name, town, state and date of newspaper or magazine; do not roll clippings, but fold flat.

Recipes suitable to the next approaching season, and practical hints on home-keeping health and hygiene are suggested from women friends. From any reader brief articles are

acceptable on topics under any of the ten departments. Boil everything down and make things clear. Keep a copy, for what you send will not be returned, but considered a contribution to our work.

Pot Roast

Take a piece of beef from the round in a chunk. Sear this all over by pressing it down in a hot frying pan, first on one side and then on the other. This makes a covering that keeps in the juices. Then simmer it a long, long time in a deep covered dish. When it is half done put in salt and pepper, chopped onions and plenty of finely minced vegetables, and keep on cooking till it is tender and the juice is pretty well absorbed. You can keep it shut up in the oven or let it cook slowly on the back of range, but it must cook slowly and a long time. A four-pound piece will easily make three meals. The remaining juice may be thickened. A cup of tomatoes with vegetables may be added.

Pot Roast

Wipe one and one-half pounds lean beef. Cut in one and one-half inch pieces and sear, uncovered, in oven at temperature of 450 degrees for ten minutes. Add one onion sliced, eight slices of carrot, two sprigs of parsley, 1½ teaspoons salt, ¼ teaspoon peppercorns, 2 cups canned tomatoes, 1 cup peas. Cover and finish baking. Before serving, thicken with three tablespoons of butter to which have been added three tablespoons of flour.

Hamburg Roast

Secure from your butcher about twenty cents worth of hamburg steak, well ground; mix thoroughly with the meat one cup of bread crumbs, one large or two small onions, chopped fine. Season to taste with salt and pepper. Place in baking pan, put several small lumps of butter on top and pour a cup of sweet milk or water over all, to make gravy.

—And a California Roast

"It is the opinion of your humble servant that there will be *but very few* now living who will not die if the cooking recipes given in the GOLDEN AGE are followed. Why not give recipe for healthful food dishes?"

M. S. D., Paso Robles, C

TRAVEL AND MISCELLANY

Devil Worship in China

THE fear of evil spirits, and the desire to outwit them or appease them, is the secret of most of the illogical things that the Chinese do. The reason for the walls about the Chinese burial plots is to keep out evil spirits. The statues of animals and gods stationed at the four corners of the lots are to frighten these spirits away. The two large painted eyes at the bow of each boat are to enable the craft to see the evil spirits which are lurking in the waters, and so to avoid them. The temple roofs and the rich men's houses are decorated with large carved wood dragons to drive the spirits away. They are supposed to travel in straight lines only; and for that reason the wonderful Great Wall winds snakelike over hills and through valleys throughout the fifteen hundred miles of its length. To foil the plans of the evil spirits the wall was built with many steep turns. Temples are built with blank walls opposite the entrance gates to stop the progress of the devils, and pots and jars are left on the house roofs to catch them. Buildings are limited in height for fear the evil spirits in their flights might run into them.

This demon worship leads to superstition in every direction. It has woven itself about everything pertaining to death. Bodies remain unburied until the medium assures the family that the lucky day has arrived. When the day does arrive, the body is buried with food and clothing for its future needs, and sometimes with a horse and cart in which to travel about. Fastened to the coffin is a rooster, which is supposed to convey the spirit to its ancestral home. China has vast coal deposits, but the Chinese will not develop these because of their superstitious fears of disturbing the dead. The forests have long since disappeared, and the people suffer terribly in the winter for want of the fuel which lies right at their hand.

All can see that instead of being partakers of the Lord's table the poor Chinese are partakers of the table of devils" (1 Corinthians 10: 21) the Apostle plainly states that all the worship presently offered to idols went to the demons infest the atmosphere of our earth and was

accepted by them. These demons are indeed all about us, as they were in the time of our Lord; but the ideas of the Chinese that they move in straight lines, or can be frightened by anything that human beings can do, are of course absurd. All the spiritualistic phenomena of our day are the work of these demons, as has been previously shown in these columns. In worshipping demons the Chinese are only doing in another way what is done by every person who attends a spiritualistic seance; and the same is true of persons who, while supposing that they worship the true God, are bowing down to doctrines which dishonor Him and his Word of Truth.

Atmospheric Dust

WHAT starts the rain is a question worthy of the investigative mind of a child, but one which some adults could not answer.

The evidence is strong that without plenty of dust there would be no rain. The nucleus of every raindrop is believed to be a mote of dust. If it is true that the condensation of the moisture of the air is dependent upon tiny bits of dust, it can readily be seen how important the dust of the atmosphere is.

Dust plays an important part in four ways: It is one of the chief causes of haze; it probably serves as centers of condensation for fog particles and rain drops; it is the cause of the sunrise and sunset colors and of the air color itself; and it is the cause of twilight.

Dust comes from several sources. It is blown up from the surface of the earth by wind; it comes from space outside the atmosphere; as salt dust it rises up from ocean spray; and some is blown up from volcanoes. In the volcanic explosion of Mount Krakatoa, between Sumatra and Java, dust and steam were thrown up twenty miles into the air. The dust from this explosion produced the wonderful sunset colors of 1883, which lasted for three or four years, showing that the volcanic dust remained suspended in the air for that length of time.

Dust is carried by the winds for great distances. It may be said that there is no square mile of earth that has not received dust from every other square mile.

If a man were given the problem of how to create an earth and an atmosphere which would provide suitable water supply for practically the entire surface, he would probably set out to invent an elaborate system of some kind to do the work. But the Creator, who did a better job than any human could have imagined, employed the dust of the ground to give the rain its start to water the ground, and used the same dust to paint the beautiful tints that are the despair of the artist.

To accomplish great things man employs great agencies; but "base things of the world," we are told, "and things which are despised, hath God chosen, to bring to nothing things that are."—1 Corinthians 1:28.

South Africa to Boom

DURING the war among other countries, South Africa learned something about taking care of itself without outside help. Much of the foodstuffs had previously been imported; but when war drafted the world's shipping, South Africa, rather than starve, learned to produce its own food.

The people had imported even their breakfast eggs from England, but now they raise plenty of eggs and chickens for home consumption. Butter and cheese are being produced; and the traveler can drink home-grown coffee, and eat South African vegetables. It is difficult to get textile and machinery industries underway, but mills and factories are gradually rising.

The tourist today finds Johannesburg, not a village, but a city of tall buildings, street cars, theaters, movies and hotels. The world demand for diamonds never was so great, and the Kimberly mines are operating full capacity. South Africa is called a good country for white people, with 2,000,000 whites, and some 3,000,000 colored persons there. The land is developed in only a few parts, and the hardships of frontier life are no worse there than elsewhere.

The real boom for South Africa will materialize after the Golden Age is inaugurated; for South Africa will share with all other countries the good things that are coming. What is written of "Zion", will also be true of the most distant countries: "Jehovah shall comfort Zion; he will comfort all her waste places; and he will make her wilderness like Eden, and her desert like the garden of the Lord; joy and gladness shall be found therein, thanksgiving, and the

voice of melody." (Isaiah 51:3) Yes, South Africa will boom!

Road of Epsom Salts

IN ADDITION to the best known use of epsom salts, and its employment as a fertilizer and as raw material for the manufacture of the sulphates of sodium and potassium and in sizing and dyeing cotton goods, a new use has been found in Texas.

There the traveler can pass swiftly over a road of this unique road-building material. For ten miles out of Rockport, some 170 miles southwest of Galveston, the road is being surfaced with a material which analyzes twenty-five per cent epsom salts, and which is obtained from flats where the evaporation of the Gulf water impregnates the soil with this salt.

Highway engineers, it is declared, find the mixture a good road-surfacing material; for the salt absorbs enough moisture from the air to keep the roads damp, free from dust, and firm on the driest days. It becomes slippery in wet weather, but this is overcome by adding a small proportion of shell and regulating the slope of the surface of the road.

Better and better roads will be the slogan as the civilization of the Golden Age rises higher, but there is one road the like of which has not been seen. The orders will go forth to "make straight in the desert [of man's failures] a highway for our God." (Isaiah 40:3) Not that God will use it for himself, but he will have it for men to use. As intimated, it will be a figurative, though very real road: "The highway of the upright is to depart from evil."—Proverbs 16:17.

Bright Clothes for Men

ALL MUST have noticed the gradual advance of women into the realm of men's attire, and a growing use by men and boys of garments suitable for the fair sex. It is only a few years since a colored hat-band on a man's hat was unknown. Now a London tailor is trying to introduce ruffles, pink breeches and bright stockings among men. It is our belief that the gradual removal of all differences of sex is under way, appropriate to the new condition of the Golden Age when none will die and the repopulation of earth will no longer be necessary. See Mark 12:18-26 for a statement some conditions to exist in the "new" e

RELIGION AND PHILOSOPHY

The Golden Age—From a Soldier's Viewpoint

By Brigadier General W. P. Hall, U. S. Army

THE Golden Age is that period in human history referred to by the Apostle in Acts 3: 20, 21 when he speaks of "the restitution of all things, which God hath spoken by the mouth of all his holy prophets since the world began". Surely it will be interesting to inquire what the human race has lost and what will be restored to it during the 1,000 years during which the Christ is to reign on the earth, as declared in Revelation 5: 10 and 20: 6. We find in the first three chapters of the Genesis account, that man was made in the image and likeness of God, received a paradise home, everlasting life, happiness, and the dominion of the earth, provided he remained obedient to God's commands; and that the man was pronounced by the Lord to be very good. The Bible tells us that Adam lost all, for both himself and the human race, on account of disobedience.

It requires but a casual glance at Adam's posterity—for we are all of the blood of Adam (Acts 17: 26)—to see what we have lost through the fall of father Adam.

On account of the World War, the United States is providing for more than 280,000 wounded, many having lost legs, arms, sight or hearing, etc. The other nations have many millions who are in the same condition as are some of our brave soldiers.

Our great Creator declares that he will restore to the willing and obedient all that they have lost, when his kingdom is established on the earth. We will not at this time refer to the many evidences that the Lord's kingdom is very near, just at the door. We see from Zechariah 13: 8, 9 and other Scriptures, that there are millions now living who will never die, but will fall into line as subjects of the kingdom. Take notice of a few of the joys that will come to all of these.

"The eyes of the blind shall be opened, the ears of the deaf shall be unstopped, the lame shall leap as an hart, and the tongue of the dumb shall sing." "The flesh of an old man shall become that of a child and he shall return to the vigor of his youth." "God shall wipe away all

tears from their eyes; and there shall be no more death, neither sorrow nor crying; neither shall there be any more pain." (Isaiah 35; Job 33: 25; Revelation 21: 4) Our Lord tells us that during his thousand-year reign on earth, all in their graves will come forth; they that have done good, to the resurrection of life; and they that have done evil, to the resurrection by judgment. (John 5: 29) This thousand-year reign of the Lord will be the judgment day for the world. See what a joyful time it will be: "Let the heavens be glad, and let the earth rejoice; let men say among the nations, 'Jehovah reigneth.' Let the fields rejoice, and all that are therein, because he cometh to judge the earth."—1 Chronicles 16: 31, 33.

It has been our privilege and pleasure to assist in showing the wonderful plan of our God towards the human race, to many soldiers on the Border and to some of the wounded at the Walter Reed Hospital, at the National Capital, by means of the Photo-Drama of Creation. We find quite a number interested at this time. Only think what the interest will be when men with one leg or one arm begin to awaken in the morning with two legs and two arms; when the "wheeled-chair men" will have no more use for that form of transportation! Won't there be times at Walter Reed and all the great hospitals in this country and throughout the world? Nor will these great blessings be confined to soldiers, but will surely extend to all the human race, both the dead and the living.

The headlines of the daily papers will be overtaxed in recording only a few of those wonderful things.

When our Lord at his first advent raised the dead, healed the cripples, the blind, and the deaf, his work was only a type of the grand work he will soon begin in the antitype. In the type, Jesus asked the afflicted whether they believed that he could heal them. Upon a reply in the affirmative, the man was healed instantly. In the great antitype, faith in the Lord and his kingdom will be easy. Speaking of the times in which we are living, the prophet tells us (Daniel 2: 44): "And in the days of these kings shall the God of heaven set up a kingdom which shall never be destroyed."

Who Will Show the Way?

IT IS said that in some of the European nations the people are becoming depressed and discouraged. During the war they were stimulated by the supreme effort to win the war; then buoyed up by hopes engendered by promises of a peoples' peace; now disillusioned, and heart-sick, they are sinking into apathy.

It had seemed as though the common man was to be rewarded for his sacrifice; as though, with autocracy banned, democracy would be blessed with prosperity and peace. But the leaders have felt it necessary to rivet chains upon all to constrain the restless; they see no way of deflating currency and giving the people relief from exorbitant living cost; and they feel obliged to fetter Freedom, just when the common people believed they would at last be free. Industry seems about to feel the chill hand of Uncertainty. Finance calls for funds to rehabilitate the fallen structure of industry and trade. Governments cannot continue the paternalism of war. All hands are weak. Wisdom fails. Leadership is dismayed.

Lord Curzon, spokesman for the British Government says:

"Nothing seems to me more certain than that great trouble and unforeseen developments lie before the world. I doubt whether as a result of the war we have succeeded in pacifying Europe. Whether we have or not, it is certain that for some time we will be insecure as to the stability of Asia. Having escaped the dangers of the war, Asia may be confronted with a peril even more serious through disorder and the breakup of Russia and Turkey."

The words of other leaders go beyond perplexity, and border on dismay. The search continues for a Moses to lead the world out of the quagmire. The clergy feel that the mission is theirs. "The new world conditions, brought about by the war conditions of industrial life, of international relations, and of education," declares Professor Shelby of Lane Theological Seminary, "call for increased leadership by the church and especially by the ministers. It is the duty of the ministers to assume a greater leadership in the world than they have ever before exercised." The clergy think the world's hope may be realized if only they may exercise greater authority and power than they did through the dark ages.

The Interchurch World Movement takes up

the burden of saving the world. "It is formulating," says Dr. John R. Mott, international head of the Young Men's Christian Association, "probably the greatest program undertaken by Christians since the days of the Apostles. The Protestant churches of America face the immediate necessity of intervention in the troubled industrial situation in the country."

The clergy will make an intensive investigation. The research platform includes:

"A first-hand study of industrial disputes with a view to rendering any possible service towards just settlements;

"The study and cataloguing of the occasions of the suppression of free speech, and to furnish suppressed groups the place and opportunity for free discussion of any and all affairs short of violence;

"To promote among employers the idea of recognizing labor in management, looking ultimately to their having a voice in financial control;

"To promote the idea among employes of responsibility for production; and

"To study cooperation movements, the problems of the immigrant, and to prepare literature on minimum standards of living, the history of labor and industry, housing, women in industry, agricultural labor, migratory workers, racial relations, and government services and relations."

The general committee, in charge of the world's hope, is composed of 150 prominent clergymen and laymen from the various denominational boards, and is assured by government officials, large employers and labor men that "a united Protestant constituency would have tremendous influence. The time has come for the church to take part, and the church's participation will be welcomed." "It is high time," says Dr. Fisher, head of the industrial relations department of the movement, "for a united Protestantism to cease being content with abstract statements of principles and to get down to actual participation in the labor disputes of the present."

Even militarism sees the need of an orderly settling of the world's new warfare. Colonel Carnegie says, for the Interchurch movement:

"Nothing is more necessary than the spirit that comes through the churches to industry for promoting better relations between employers and employes."

The church is the chosen champion to destroy autocracy and make the world safe. That churches will do what little they can no doubts. That they may accomplish their glorious purpose is quite another question.

need is vital. The desired end is clear. The time for action is short. The means alone are in question. Who will be the true Moses to lead to the Promised Land? The near future will decide.

The Word of God affirms that it will be Christ and his church that will lead humanity out of Egyptian bondage into the Golden Age. Without a doubt it will be done through the church of God. But among the claimants to be the church, it must be decided who is the church. The divine decision will in due time be manifested in the accomplished fact that some claimant will have done the task.

It is a wonderful Golden Age into which the world is soon to emerge from darkness and disaster. It is the dream of ancient sages made real. It is the realized hope of the world. It is "the desire of all nations". (Haggai 2:7) For the Golden Age is a period in which we are told that the world "shall obtain joy and gladness, and sorrow and sighing shall flee away."—Isaiah 35:10.

How will this wonder come to pass?

First, the common people will be given assured freedom from want. It is rarely that a man desperate from poverty and hunger seeks the consolations of religion. But in the happy Golden Age of man there will be plenty; for "the earth shall yield her increase" (Psalm 67:6); and, says God, "I will call for the corn [grain], and will increase it, and lay no famine upon you; and I will multiply the fruit of the tree, and the increase of the field." (Ezekiel 36:29, 30) This will come by the God-given discoveries of a thousand Burbanks working for love of the people.

All will rapidly come to have good homes and pleasant surroundings. Nowadays the worker builds a palace and a millionaire lives in it; he builds an apartment, and has the privilege of living in it as long as he pays another millionaire rent. But then, "they [the workers] shall not build and another inhabit; but they shall build houses and inhabit them; they shall enjoy the work of their hands." And every worker can have his own little orchard. The worker will not create an orchard or vineyard for the rich, and never taste the fruit; for "they shall not plant, and another eat, but they shall plant vineyards, and eat the fruit of them" (Isaiah 5:21, 22); and "they [the workers, for all will be producers] shall sit every man under

his vine, and under his fig tree." (Micah 4:4) It will be ideal—the Golden Age—when every man, woman and child will be happily placed in his own home amid a culture and a plenty such as yet are unknown. Look at the beautiful suburbs of our cities, and think of nation after nation dwelling in such surroundings from one end of the continent to the other and the whole world over.

Now the cry of everyone from prince to pauper is for the blessings of peace. False prophets cry, "Peace! peace!"—but there is no peace. National war ceases; internecine war commences; and no human wisdom can see the end. But the end is promised; for in due time the Savior will say to the angry commotion, peace. National war ceases; internecine war come the "great calm" so much desired. The militarists will no longer lead men into war, but the Prince of Peace" will "guide our feet into the way of peace." (Luke 1:79) "Nation shall not lift up sword against nation, neither shall they learn war any more;" but the people "shall beat their swords into plowshares, and their spears into scythes." (Isaiah 2:4) The blessed growth of the arts of peace shall never again cease; for God says, "I will extend peace to her like a river" (Isaiah 66:12), and "of the increase of his government [Christ's kingdom] and peace there shall be no end, to order it, and to establish it with judgment and with justice [in all relations of men] from henceforth even forever." And to this God sets his signature when he adds, "The zeal of the Lord of hosts will perform this."—Isaiah 9:7.

He Whose Right It Is

ZEDEKIAH, last king of Israel, was a very wicked ruler, and to him the Lord said: "And thou, profane, wicked prince of Israel, whose day is come, when iniquity shall have an end, thus saith the Lord God, Remove the diadem and take off the crown: this shall not be the same: exalt him that is low, and abase him that is high. I will overturn, overturn, overturn it: and it shall be no more, until he come whose right it is; and I will give it to him."—Ezekiel 21:25-27.

The one whose right it is to succeed to the throne as ruler and blessing of mankind is the Lord Jesus, the Christ, the great Messiah. Nearly nineteen centuries ago he came to earth as a man and died upon the cross that he might

provide the ransom or purchase price for the human race by which mankind could be legally released from the condemnation of death. He arose from the dead and ascended on high. Before going away he taught his disciples to pray to Jehovah, "Thy kingdom come, thy will be done on earth as it is done in heaven." (Matthew 6:10) He told his disciples that he expected to return. (John 14:1-5) They asked him the specific question, "Tell us, when shall these things be? and what shall be the sign [proof] of thy coming and of the end of the world?" He answered that the time would be marked by great trouble in the earth—a great world war, in which "nation shall rise against nation, and kingdom against kingdom". (Matthew 24:7) That war began in 1914 and is ended. He further said that the war would be followed by famine and pestilence. The famine is now in the earth; and likewise we have experienced the pestilence, the great influenza. He said further that the war, famine and pestilence would be followed by revolutions; and such have already occurred in some of the nations, and all other nations are being threatened. He further stated that upon earth there would be "distress of nations with perplexity; men's hearts failing them for fear". (Luke 21:26) And this is fulfilled. "For then shall be great tribulation, such as was not since the beginning of the world to this time, no, nor ever shall be."—Matthew 24:21.

A New Idea In "Religion"

A PROMINENT church paper of one of the great religious denominations has made an appeal that should strike a responsive chord in every human heart. It proposes that for the immediate future the professed church of Christ should pay a little less attention to preaching about fighting, and raising money on first one religious "drive" and then another, and devote its energies to preaching the Gospel.

It calls attention to the fact that for several years past the people have heard a great deal about fighting, and it is not sure, now that the soldiers have returned, that all of them have developed in Christlikeness as a result of their activities and environment while abroad. Why this should be when the soldiers have been ministered to daily by the Knights of Columbus, the Y. M. C. A. and other war organizations is not explained.

It also seems to notice an apparent chilling of public interest in "drives" to raise money for religion. Many people have agreed to set aside specified sums from their incomes for the next five years for one, two or three purposes; and the church paper in question thinks that more money can be raised by getting new converts and getting the money out of them, than by trying to raise more funds from the old ones.

There is a suggestion, too, that the people who have been in the front line trenches on all these recent drives would welcome some evidence that their money is being wisely expended, and that the results coveted and promised are attainable, if not in the immediate present then in the not far future.

We think these observations by our contemporary are opportune. We are inclined to stress this matter of professed ministers of religion attending to the business of religion. We realize, of course, that having little to do during the week, and little on Sunday, ministers are easily interested in any worldly subject in which some or all of the members of their congregations are interested; and this fact is no doubt responsible for many of their recent activities.

We hope this idea of having ministers encouraged to preach the Gospel will not be lost sight of. Many of them have preached on every other subject, and to dwindling congregations, as the statistics show; and if now, this time-honored custom of trying to run the world's affairs should give way to a faithful preaching of the Word of God, and the means by which men may gain everlasting life, we go on record as prophesying a renewed interest in religion by some who had formed the idea, justly or unjustly, that many ministers were in the preaching business to preach what the people wanted and not what the Bible teaches.

We think our contemporary made a mental hitch in insinuating that the best way to raise more money is to get more converts. We know that some have formed the idea that the true ideal of religion is "To get more converts, to raise more money, to build more churches, to get more converts, to raise more money, to build more churches", etc.; but we think a better conception of the matter would be obtained by studying the Scriptures, especially the life of Christ, and noting the absence from his preaching of any desire either for numbers or collections or church buildings. He seemed to be

lued with the idea that the greatest object of the Christian should be to lead a Christlike life, and to tell of the coming kingdom of righteousness, peace and life eternal, that will be the joy and satisfaction of every human heart. If the ministry will turn to this, and away from fighting and drives for church money, they may yet save something out of the wreck that civilization now faces.

Judea for the Jews

TO THE Jew, after release from his seventy-year bondage to Babylon, the very thought of the captivity was hateful and everything connected with it was to be eliminated; the new Jewry which preceded Christ's day was to be one refined from all trace of the pagan.

History repeats itself; and today in Palestine the Jew plans for a Jewish polity, entirely freed and cleansed from every suggestion of the age-long captivity in Europe. It is not surprising that the Zionistic Jews, or "Palestinians", agreed that as candidates for the constituent assembly the only eligibles should be Hebrew-speaking Jews. No mixed dialect was to have an official footing in reorganized Jewry. Not even Yiddish, though the language of seven millions, is to be permitted in official circles.

Thus the strange exile of a nation, for ages maintaining its identity unaltered, begins to end. The break with Europe is to be complete. Anything the European oppressors have forced upon the Jews is to be discarded—the ignoble habits of mind, dress, occupation or speech are to go forever.

The Jew in Palestine is to be a farmer, an occupation denied to him for centuries. He will institute the most advanced system of education, with the world's most famous educators, in contrast with the enforced Russian denial of

higher education. His clothing will be the best the world affords, against the yellow badge of anti-Semitic reproach. His dwellings will be amid gardens, in place of Europe's over-crowded tenements and hovels.

"The Jews", says the *London Spectator*, "are to have Jerusalem at last; they are no longer to be there on sufferance of the Moslem. The tables are to be turned; they are at last able to stalk proudly through its streets; it is the Moslems and the Christians who are henceforth to take the wall. The Wailing Place is deserted. No one comes there now. For the first time in centuries the spectacle of the crouching Hebrew lifting up his voice in lamentations at the lost glories of Israel has wholly ceased. There is nothing to lament. The sun shines on Zion."

"There is a time [the long, hard, so-called "Christian" age] to break down [Jerusalem], and a time [forever] to build." (Ecclesiastes 3:3) This is the time now begun. Soon Jerusalem is destined to blossom out into a beauty, honor and grandeur greater than even the most sanguine Zionist might expect; for it is "the Holy One of Israel" who is fulfilling his own prophecies, before all eyes. "He [the Holy One of Israel] shall build my city [Jerusalem], and he shall let go my [the Jewish] captives [captive for eighteen centuries in Europe] not for price nor reward."—Isaiah 45:13.

And to what peak of honor are the Jews in Palestine to be lifted? "Thus saith Jehovah, The labor of Egypt [the whole civilized world] and merchandise of Ethiopia and of the Sabeans [the pagan world], men of stature [of prominence] shall come over [to the Jews in Jerusalem], and they shall fall down unto thee [the restored Jewish state], they shall make supplication unto thee, saying, Surely God is in thee."—Isaiah 45:14.

HOW LONG?

God of all right! how long
Shall priestly robbers at Thine altar stand
Lifting in prayer to Thee, the bloody hand
And haughty brow of wrong?

Hoarse, horrible, and strong,
Rises to Heaven that agonizing cry,
Filling the arches of the hollow sky,
How Long, O God, How Long?

Written 1848

John Greenleaf Whittier

GOLDEN AGE CALENDAR

DECEMBER 10 TO 24

Year, 1919 A. D.: 6043 since Creation; 7427 Byzantine Era; 5680 Jewish Era; 2672 of Rome; 2605 of Greek Olympiad Era; 2379 Japanese Era; 1333 Mohammedan Era.

Stars: Morning; Mars, Mercury, Jupiter, Saturn, Venus.

Sun., Dec. 10: Sun rises 7:13 a. m., sets 4:32 p. m.; Moon rises 9:48 a. m., sets 9:45 p. m.; Twilight begins 5:35 a. m., ends 6:11 p. m.; High tide 10:13 a. m. and 10:34 p. m. (New York); 1698, American-Spanish Peace Treaty signed at Paris; 1918, William Hohenzollern reported to have attempted suicide.

Thur., Dec. 11: 1918, 30-day armistice with Germany ceased.

Fri., Dec. 12: Our Lady of Guadalupe Day, Mexico; 1901, Marconi sent first wireless signal from England to Newfoundland.

Sat., Dec. 13: Important conference of labor men at Washington; 1918, President Wilson arrived at Brast, France.

Sun., Dec. 14: 1911, South Pole discovered; 1917, Advertising signs ordered darkened by Federal Fuel Administration.

Tues., Dec. 15: Death of Prophet Day, Turkey; 1773, Tea destroyed in Boston Harbor.

Wed., Dec. 17: Dedication of Temple Day, 25th day of Jewish month Kislev; 1917, Canadian conscription law confirmed.

Fri., Dec. 19: St. Nicholas Day, Bulgaria, Greece, Roumania, Serbia; National Holiday, Venezuela.

Sat., Dec. 20: 1860, South Carolina seceded; 1917, Australia defeats conscription.

Mon., Dec. 22: Winter begins with winter solstice, 4:27 p. m.; Month Nivose (Snowy) began in French Revolution.

Tues., Dec. 23: Pete of the Queen, Spain; Jewish month Tebet begins; 1894, Captain Dreyfus degraded in French army.