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A Forest-Denuded Land

PENNSYLVANIA means literally "Penn's Woods", a very good name for what three hundred years ago was an unbroken forest from north to south and from east to west. At that time most of the land from the Missouri River to the Atlantic Ocean and from the timber line of Northern Canada to the Gulf was a primeval forest, and it is small wonder that the early settlers thought they had more forests than they needed and that the country would never amount to anything until these were removed.

Accordingly, within the next few generations, almost all of the great bodies of timber in the country were transferred from public to private hands; and the people who received these grants, not having more wisdom than their rulers, wrought such havoc and destruction in those forests, and are still working to the same end, as to cause those to gasp who perceive what the certain result will be.

Less than a hundred years ago a man's value to the community depended largely upon his ability as a worker in the clearing of land. Great trees that would now be worth fifty dollars each for the lumber they contain were felled and burned where they fell, so that the land they covered could be utilized for crops worth less than that amount for an entire acre.

There are men now living who can remember when black walnut forests in Southern Indiana were disposed of in this way, which, if now standing, would be worth a fabulous sum. When the World War came on, the United States government found the greatest difficulty in locating enough black walnut to make the stocks required for the rifles of its soldiers.

The situation that now confronts America is that eighty percent of the standing merchantable timber is privately owned; and that the people who own it have no interest in it whatever except to obtain from it, as quickly as possible, the wealth which it represents, and with no thought of responsibility as to its replacement.

How the Forests are Going

THE annual cut of lumber in the United States is thirty billion feet. One region after another has been cut over and deserted by the lumber interests, and left a wilderness of stumps and underbrush. Only a few years ago one of the principal sources of lumber was in New England. Today fully thirty percent of all the lumber used in New England is brought in from other parts of the country.

New York was also a great lumber state. Today it is purchasing one hundred and twenty-eight million dollars worth of lumber per year, and eighty million dollars worth of that amount is shipped into the state from other districts.

Less than a generation ago the Lake States were the greatest producers of lumber in the country. Today it is estimated that these states are paying a freight bill of six million dollars a year to bring in lumber and other forest products from outside sources.

The present field of destruction is in the South. One-half of the lumber now cut in the United States is Southern pine, and experts say that it will all be gone in fifteen years. It is now disappearing at the rate of fifty thousand acres a day. Three thousand Southern mills will go out of business in the next five years because they cannot get the timber to keep on. Already Southern pine is being withdrawn from many points as a competitive factor, and its place taken by Western timbers, resulting in added freight charges which the consumer pays.

To be sure there is still the standing timber of Northern California, Oregon and Washington; but this, too, is going. Trees which have stood for four thousand years are being cut up to make fence posts, stakes for grape vines, railroad ties, etc.; and they can never be replaced. And then there are the forests on the southern shores of Alaska and the eastern shores of Siberia, the latter already in process of exploitation by American lumbermen.

At present the rate of depletion of the forests is more than twice what is produced by growth in a form suitable for other purposes than firewood, and at the present rate of cutting it is estimated that when boys now ten years of age are sixty years old they will be living in a land from which all the merchantable timber has been stripped. The virgin forests of the United States have already been reduced to one-fifth of their original area.

Effect on Wood Industries

WHEN the timber is cut off from a district many of the chief industries of the community perish. Factories cannot operate profitably when their raw materials must be brought from afar, and so it follows that in the wake of the lumberman there are not only idle sawmills but idle box factories, furniture factories and other wood-working establishments.

When a region such as New England has three hundred million dollars invested in the wood and forest industries, and employs in this connection some ninety thousand wage earners, it becomes a matter of immediate interest to the whole of New England as to what is to be done when the forests are all gone. Douglas fir from the Pacific coast is already coming into the New England market, but nobody supposes that the New England wood industries can face modern competition and pay freight charges on raw lumber transported four thousand miles.

Effect on Publishing Business

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ALTHOUGH the country might be just as happy and just as well informed without some of its large publishers, yet we could not be certain that in the cramping down of the publishing business the least deserving publishers, those who have done most to mislead and deceive the people, might not find ways to continue, while the most deserving would go to the wall. In any event, if things keep on in the lumber industry the way they have been going, we hid fair to find out what will happen; for something is sure to happen before very long.

The United States uses one-half of the world's supply of white paper, amounting to 5,500,000 cords of pulp-wood yearly. The woods suitable for paper manufacture are chiefly spruce, poplar and balsam firs. The newspapers of New York City alone consume the equivalent of over nine thousand spruce trees daily.

The consumption of print paper in the United States has increased one hundred and fifty-six percent since 1898, while the cost of print paper has increased over six hundred percent. No new paper-mills are being built. There is no use to build them; for they would not be able to find the raw materials with which to operate.

It is estimated that the supply of woods suitable for paper manufacture will all be cut off from the Lake States in eighteen years, and from New York and New England in seventeen years, while Pennsylvania, Maryland, Virginia and North Carolina are worse off. Some of the principal paper concerns have already fortified themselves against the day of reckoning by purchasing large blocks of timber in Canada.

Effect on Agriculture

IN CONSENTING to the cutting off of timber in the semi-arid regions of Southern California, Arizona and New Mexico, the inhabitants of those states have sinned against their own souls. The tree was and is their greatest friend, and now that it is too late some of them are beginning to find this out.

Stretching his branches into the sky the tree caught the rain on leaf and twig, and carried it downward by branch and trunk, and deposited it in the sponge of decayed leaves at his feet. Slowly it trickled down into the ground, and became a fountain for the little stream which supplied the vineyard and orange grove in the valley below. He even picked up water from the fogs, as may be discerned by the wet ground beneath a tree on any foggy morning. He sheltered the vegetation from the hot winds of the desert. His value in the conservation of water, and the consequent prevention of floods, is estimated by experts as worth as much as sixty dollars per tree per year-the interest on a thousand dollars.

With the cutting away of the timber in these sections, which has been encouraged and prose-

cuted as vigorously as elsewhere, the result has followed that the rains which do fall, and which are the very life of the inhabitants, pass away at once in great torrents of water that have widened water courses to ten times their former width, thus not only wasting the water which the fruit grower must have if he is to continue in business, but actually destroying much arable land that until recently produced a profusion of fruits, flowers, grain and vegetables.

Effect Upon Navigation

TATE HAVE not the data at hand to write intelligently on this phase of the forest problem, but it is a serious phase of the question nevertheless. The time was when the flow of our great rivers was fairly constant, and this was due to the retention by the forests of much of the water that fell in them in the form of rain and snow. Now we are accustomed to hear of frequent great floods, and many routes of river transportation have had to suspend because the water-courses they once traversed are now so irregular in volume as to make navigation difficult or positively unsafe or impossible. naw, a Michigan port once thronged with vessels, is now high and dry since the timber was cut off. The forest-denuded lands of the Adirondacks have washed down into the upper Hudson River to such an extent as to form mud-flats below Albany, where only a generation ago was fairly deep water.

Timber Losses by Fire

THE loss of timber by forest fires in the United States is estimated at from twenty to one hundred million dollars annually. The area burned each year by these fires totals ten times the devastated region of France after the World War. As the country gets more thickly settled the forest fires, instead of becoming fewer, tend to increase in number.

The states of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Arkansas and Missouri average about seventeen thousand forest fires per year, with an average loss per fire of about four hundred dollars. Three of these states, North Carolina, Louisiana and Texas, have organized arrangements for fighting these fires.

The National Government until recently expended the modest sum of two hundred thousand

dollars per year on a forest fire patrol. It seems to us a wise investment of the money; but after the World War, which cost the country over fifty thousand million dollars, the House committee which had this matter in hand had a sudden fit of economy and reduced the appropriation to seventy-five thousand dollars per year. This would hire about two dozen first-class men. No wonder the Department of Agriculture has issued a call for volunteers to report forest fires!

Several of the states have their own forest ire commissions. The State Conservation Commission of New York has fifty-four stations for the observation of forest fires, fifty of which are equipped with steel observation towers. During the season of 1919 these stations in the Adirondacks and Catskills reported 266 forest fires the total damage of which was kept down to \$3,825, about fifteen dollars per fire. This shows that forest preservation in mountainous regions is a possibility.

Valueless Second Growths

THE fact that there is some woody growth on cut-over land gives a false impression. The new growth is frequently slow-growing, crooked, or valueless because of its variety. Thus in Minnesota hundreds of square miles of wonderful white and red pine, that the Almighty placed there long ago for the use of us savages, have been replaced by bird-cherry and fireweed; in the South the matchless yellow pine has given place to the worthless black-jack oak; Pennsylvania's majestic forests have been replaced by scrub oak; New England's forests have been largely followed by inferior woods of gnarled and ugly shapes.

Private vs. Public Forests

WHEN the practice of giving away the nation's timber lands had been found unwise, and before it was entirely gone, the Government reserved one hundred and fifty-five million acres of timber, all in the western mountains. These public forests are being protected from fire, as well as can be done by the skimped appropriations; the timber is used as called for by economic conditions, and the cutting is conducted by such methods as to leave the land in favorable condition for the next crop of timber. Only three percent of the country's current timber supply comes from this source.

In 1911 the Weeks bill, appropriating eleven million dollars for the purchase of forest lands at the head of navigable streams, became a law; and in carrying out the provisions of this law the United States has come into possession of about one and one-half million acres in the Eastern states—not very much when the size of the country is considered, but something, nevertheless.

There is not much chance that the Government can accomplish anything worth while in attempting to recover from its owners the standing timber now in private hands, although bills are now up before Congress attempting something of the sort. We may as well reconcile ourselves to the fact that the present owners will proceed to cut off the timber now on their lands; and we may as well understand, too, that they will do nothing toward replacement.

The growing of a forest is a long-time investment. Lumbermen are unwilling to stand the cost of planting trees which they do not expect to see come to maturity. Forest profits are slow, in spite of the fact that they are sure, and that they come from lands which are not profitable for other purposes. Therefore it would seem that here is one thing in which communal ownership is better from every point of view than private ownership. The people as a whole can well afford in the interests of the people as a whole to make any investment which is necessary to their well-being.

European Foresters Lead

It IS to be expected that in the older countries across the sea this matter of forestry would have more attention than in a young country like America. Hence we find that in the countries of central Europe it has been the custom for a long time to cut only the mature trees and to plant a new tree for every one cut. Thus their woodlands bear a perpetual crop, their arable lands are not encroached upon by floods, and the waters carried in the streams are constant in their flow.

We have mentioned in The Golden Age the little village of Orsa, Sweden, in which there are no taxes because the communal forest provides all the income necessary to sustain the government of the municipality. Other communities approach this, and more are planning to do so.

The city of Zurich, Switzerland, controls

2,840 acres of land planted to forest, from which the annual sales of firewood and timber are sufficient to bring the city a net income of twenty thousand dollars a year. Not only does this forest provide a perpetual income to the city, but it perpetuates the supply of water, prevents floods, snow slides and earth slides, protects the birds, game and fish, and provides a healthful playground for all the inhabitants, young and old.

The forest area of France is the same as the forest area of New England. Its wood-using industries furnish employment to about eight times as many persons as the wood-using industries of New England, yet the forests of France are so skillfully managed that at the outbreak of the World War she was progressively building up her forest resources, while New England was progressively destroying hers. Moreover, at the outbreak of the war France was importing less lumber from outside than was New England.

French and English forests both suffered terribly in the demands which were suddenly made upon them by the war, but they do not intend to remain forestless. England proposes to plant over a million acres of forest in the next forty years, spending about two million dollars per year in the work.

Golden Age Reforestation

GREAT works of reforestation will be the order of the day in the Golden Age. Men will know that earth is to be their everlasting home, and they will plan together to make it a beautiful and desirable habitation. Notice what the Prophet Isaiah has to say about the matter:

"Instead of the thorn shall come up the fir tree, and instead of the brier shall come up the myrtle tree; and it shall be to the Lord for a name, for an everlasting sign that shall not be cut off."—Isaiah 55:13.

"I will open rivers in high places, and fountains in the midst of the valleys: I will make the wilderness a pool of water, and the dry land springs of water. I will plant in the wilderness the cedar, the acacia, the myrtle and the oil tree; I will set in the desert the fir tree, and the pine, and the box tree together: that they may see, and know, and consider, and understand together, that the hand of the Lord hath done this."—Isaiah 41:18-20.

The Pursuit of Happiness

MEN are endowed with an inalienable right ... the pursuit of happiness—so runs the Declaration of Independence. Whoever seeks to restrict this right is an enemy of man. Any one that hinders the people, particularly the poor and needy, in the pursuit of happiness knows nothing of true Americanism, is worse than a seditionist, is guilty of a high crime against humanity.

There exists today, in one aspect of the situation, a conspiracy of Big Business, the politicians, and the ecclesiastics, which in effect keeps the common people from this inalienable right—the pursuit of happiness.

Prior to the creation of the existing system of banking, before the World War, the control of credits in the United States was sporadic and ineffective, working in a loose way through national, state and private banking institutions. Now credits are directly subject to the control of, and are immediately responsive to, the regulations dictated by the Federal Reserve system of banks, which exercises the power to regulate credits locally and nationally. By raising the rate of interest on credits or by restricting the amount of credits to be granted, this system regulates the amount of money with which business concerns may be permitted to do business, **both** nationally and locally. It has power to cause prosperity or depression to whole sections and to the entire nation, as well as to individual concerns. Whether the Federal Reserve system **proves** a blessing or a curse depends upon the beneficent or the harmful use of its powers. Misuse of its privileges would immediately raise the question of its fitness to survive. It may always be regarded an open question whether it is safe to entrust to a small group of men such vast and unrestricted power over the weal of the common people.

It is an inalienable right of the people to enjoy the fullest measure of prosperity and consequent happiness possible under given circumstances. This means that the people have the right to prevent the harmful activities of any that may, with great power, bring about a less degree of prosperity than might have existed were all to coöperate fully and freely for the promotion of prosperity. Those that hinder the

people in their apportunity to have work, wages, and the enjoyment of the fruit of their hands are public en mies.

Evidence exists to the effect that Big Business, working through the great politicians, and with the clergy as silent accomplices, are carrying out a gigantic conspiracy through the Federal Reserve Bank system, the object of the conspiracy being to restrict the employment and consequent happiness of many of the common people.

During the World War, as a result of the larger wages earned by a considerable portion of the working people, labor began to enjoy a greater measure of freedom from the restraints caused by fear of unemployment. Labor grew in independence and in arrogance, as financial circumstances began to look easier. The workers in great numbers effected a partial escape from economic bondage. They participated in a larger measure of enjoyment of the things making for happiness.

Big Business termed their enjoyment of more of the good things of life "an orgy of spending", and likened labor to "a drunken sailor" in expenditures, which of course, were all right for those accustomed to abundance. Big Business became displeased at labor's growing independence, at its increasing "intractability", at the enhanced difficulty of keeping labor "in its place". Labor, however, being ninety percent of the population, believes that its province is to run the country, and that the under-one-percent of bankers should restrict themselves to their proper place of taking care of money entrusted to them, and not usurp the management of everything in sight.

Big Business long ago determined that the time was coming when it would have to "teach labor its place". Seemingly in the pursuance of this purpose, a leading American Association of business men some months ago was reported in the public press as determined to "make labor cat out of its hand". The ultimate object in view evidently was the preservation of Big Business's "inalienable right" to the pursuit of happiness, which was in danger of some limitation, should the seeming abundance enjoyed by labor continue too long.

Following this decision, and apparently as

logical steps in the execution of a definite plan, the following moves have been made:

There came last summer from the Federal Reserve system a sudden edict that credits were to be restricted by the local banks. This diminished the amount of capital available for use by merchants and manufacturers, who found it necessary immediately to diminish the extent of their business operations. An incident was the sudden announcement of bargain prices by stores a few months ago wherein many Golden Age readers obtained "bargains" which now would be high-priced.

Farm products, never unduly high at the farm, were reduced in price in several ways. Loans to farmers promised through the much heralded Federal Farm Loan System were held up by legal action by political office-holders against the making of such loans; an impasse was reached which is not yet cleared up; and in the meantime the farmers, the most deserving class of the citizenry, have been denied the credit facilities freely granted profiteering manufacturers, miners and merchants. As a result of attacks by the Department of Justice upon the great packers to cause them to lower their prices, the prices paid farmers were cut to a ruinous extent, the farmers being unorganized and unable to protect their interests. \mathbf{After} covering immense speculative operations in exports of farm and other products to Europe by Big Business, the domestic prices of the leading farm staples, wheat, corn and other grains and of cotton were permitted to fall to below the cost of production, putting millions of farmers face to face with ruin, and bringing home to the farming fraternity the fact that they, too, must abstain from politics and "keep their place".

Attacks have been made upon trades-unions of miners, steel workers, and railroaders, in part through an unjustified use of a war measure, the Lever Act, to cripple their efforts to obtain higher wages and the better working conditions so badly needed, especially in the steel industry. An industrial court scheme, fathered in Kansas, which in effect enslaves the workers by tying them to their tasks, has been industriously promoted by chambers of commerce and other henchmen of Big Business, "to teach labor its place". In innumerable instances working people have been effectually restrained from "pursuit of happiness" by such measures.

Assaults have been made upon Socialists and others to render them odious, east them out of places to which they have been duly elected by the franchise, and to prevent them from spreading among the citizenry the facts about the current interferences with inalienable human rights.

The public press is being systematically employed to deceive the reading public, to exalt the enemies of the common weal as friends of the people, to misrepresent truth-tellers as enemies of the state, and to cause the people to fear or despise their true friends, the purpose being to bind the minds of the multitude, the more effectively to bind their activities.

Legitimate business enterprises and ambition have been impeded by restricting of credit at the banks, as suggested foregoing, by hindering the transportation of material needed in manufacturing processes, and by sowing discord among employés to break them up into mutually suspicious groups.

Big Business and the politicians have neglected one of the chief causes of trouble—the inflation of the currency in circulation. This, instead of decreasing, is steadily rising, the average per capita being \$59.48 on November 1, 1920, as compared with \$55.84 six months ago, and \$54.77, \$55.76, \$48.76, \$43.00, \$38.48 and \$35.50 on the first of the successive Januaries for a number of years back. Only as the volume of currency in circulation is reduced can permanent progress be made in reducing the cost of living, on the principle that when the people as a whole have double the amount of money to spend they pay twice as much as before.

By these and other restraints upon the operation of industries, the object has been attained, and is now well under way, of throwing labor out of work in sufficient numbers to make all feel anxious about their living, thereby rendering them less independent, permitting them to enjoy less of the good things of life, and making them more "tractable". In every part of the country workmen have been discharged, and immediately hired back at two-thirds or even half the former wage—glad to get that. It is considered good policy by Big Business to impoverish the poor still more, to force them into halftime employment and otherwise to reduce their earnings. Months ago this sinister power said that it would bring about in every city bread lines and soup kitchens, knowing that the result ing poverty and distress, and especially the FEAR of Big Business would "make labor eat of its hand"—figuratively and LITERALLY.

Coupled with Big Business in this unholy conspiracy against the welfare of the people have been the great politicians, duly elected to office and sworn to defend the interests of the public. but actually placed by Big Business where they could "do the most good". The ecclesiastics have aided the conspiracy by silence, or by advising the people to endure without attempting to assert constitutional rights, or by denouncing friends of the people who were seeking to rouse a sovereign people to their danger and to cause them to seek again such a kingly independence as was expressed nearly a century and a half ago by the forebears of many of the people: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain inalienable rights, that among these are life, liberty and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed". To paraphrase, the true friends of the people, 'appealing to the Supreme Judge of the world for the rectitude of our intentions, do in the name of the common people, solemnly publish and declare, That the Common People are, and of right ought to be, FREE AND INDE-PENDENT of Big Business, the Politicians, and the ambitious Clergy; that they are absolved from all subservience to the aforesaid Unholy Trinity, and that the state of partial servitude to them is and ought to be totally dissolved; and that as free and independent people, they have full power to do all lawful acts and things which independent people may of right do. And for the support of this declaration, with a firm reliance on the protection of Divine Providence, we mutually pledge our lives, our fortunes, and our sacred honor.

Big Business ought to be the servant and handmaid of the people, not their master, and in this relationship ought to operate for the benefit of all the people at a reasonable profit. It ought to conduct business operations at the maximum capacity possible without ever needlessly restricting them. The public press ought to become, not agencies for blinding the people, but N-R-W-S-papers. The politicians ought to serve the best interests of all the people. The clergy ought to give up the impossible attempt

to serve God and Mammon, and serve Him alone unto whom they are set apart, comforting the hearts of the people, guiding them with the Word of God, minding spiritual things and avoiding the earthly and fleshly things which pollute their holy office and drag them down.

Otherwise the divine pronouncement that was made to the Hebrew people and church will apply to the Christian people and their churches. It is not too late, but haste must be made:

"Behold, as the clay is in the potter's hand, so are ye in mine hand, O house of Israel [Christian people of America]. At what instant I shall speak concerning a nation and concerning a kingdom, to pluck up, and to pull down, and to destroy it; if that nation, against whom I have pronounced, turn from their evil, I will repent of the evil that I thought to do unto them. And at what instant I shall speak concerning a nation, and concerning a kingdom, to build and to plant it; if it do evil in my sight, that it obey not my voice, then I will repent of the good wherewith I said I would benefit them. Now therefore go to, speak to the men of Judah [Christian people], and to the inhabitants of Jerusalem [adherents of the Unholy Trinity], saying, Thus saith the Lord: Behold I frame evil against you, and devise a device against you: return ye now every one from his evil way. and make your ways and your doings good. And they said, There is no hope [of our changing]: but we will walk after our own devices, and we will every one do the imagination of his evil heart."

If "Christian" America through its leadership in the Unholy Trinity answers the divine appeal in the foregoing manner, then the words of the Lord for them will be as follows:

"Because my people hath forsaken me, they have burned incense [put forth their best endeavors] to vanity [things of no eternal worth], and they have caused them [the trusting common people] to stumble in their ways from the ancient paths [such godly paths as the early Americans took], to walk in paths [like war, profiteering, and oppression], in a way not cast up [not high and noble]; to make their land desolate and a perpetual hissing; everyone that passeth thereby [in memory of it] shall be astonished, and wag his head. I will scatter them as with an east wind before the enemy; I will show them the back and not the face [favor] in the day of their calamity."—Jeremiah 18:6-17.

Big Brother Bosses

WONDERFUL movement—seemingly—is spreading among American employers. In their relations with workers they are no longer to be the "cruel taskmaster", but the Big **Brother.** After the wage-scale has been suitably depressed through recent credit restrictions and the hard times engineered through the Federal Reserve Bank system, the worker is to be made to appreciate that his boss is really his long-lost brother and that harmony is to reign in the industrial family. No more exactions from people "over" the worker, no more driving by unsympathetic foremen, no more discourtesy, no longer the lack of consideration for human welfare that has marked the industrial past: but it is to be as man to man, as Christian to Christian, if you please, and all is to be on the upgrade toward heaven on earth-except that wages are no longer to be unduly raised, the sad past having been buried, the hatchet entombed.

So read the new proposals of employers to workers, in confidential booklets "just between us", wherein a new gold-plated proposition is set before the workers. In every concern, under the imminent dove-like Republican administration of affairs - which has just had the ground cleared by lowering prices, days' work per week, and wages and by "reducing" workers in one of the most cruel though artificial spells of hard times known in the country —a Company Plan is to be submitted in the interests of peace and harmony, "law and order", and so on. Under this plan an "association" of employés is to be organized. It is to have many attractive features—insurance, cafeterias, pensions, hot coffee, smoking rooms, rest rooms, employés' monthly journal, tennis court, annual workers' picnic, plant hospital, company doctor, maybe a corporation priest and pastor—though this is not mentioned—the right to be "heard" in differences over wages or working conditions, and some of the other "welfare" sugar-coating, that in not a few plants the workers have long paid for out of the difference between their pay and the wage they should have had.

The great employers say, "We must have satisfied employés". They claim to be willing, nay anxious, to pay "a fair wage for a fair day's work". They aver that they desire to "do" their

workers good. Their speech is to the effect that they intend to rectify all "real" grievances the employés may have. They profess willingness to let their "help" have the "privilege" of collective bargaining over wages and working conditions. They say that always in the past they have been fair and square with the workers. They are glad now to have their people organize into an association limited to the one plant or con-Where there are laws governing wages and working conditions the employers state that they desire to observe and keep the laws in a fair and above-board spirit. They say they are willing for any employé to continue his membership in any union, but of course prefer him to be in the local association. They announce that they will do nothing to coerce, intimidate or compel any worker to join the company association, or to give up union membership. They are "magnanimous", and will subject no one to evil or harmful influences for his attitude toward the Big Brother proposition.

Inasmuch as when men apply for work, they are judged not by what they say they can and will do, but by what they have done, so it is but fair to place in the balance the employers' past, their deeds in this connection, and their present promises.

In many instances employés have not been permitted to read or to take with them for careful consideration the company booklet on the Big Brother scheme, being expected to be satisfied with oral statements. Employés complain that they have been browbeaten and intimidated by petty officials. They have been threatened with evil in a variety of ways if they did not "go along". Employers have for years back tenaciously fought employés in any attempt by the latter to improve wages and working conditions. They have ignored the wishes of workers. They have positively refused to confer with them on differences affecting such matters. They have pronounced fair innumerable schemes which the workers have declared unfair. When laws existed governing the settlement of disputes they have ignored important provisions of the laws. When decisions and interpretations have been issued they have twisted these into something far different from either the spirit or the letter. They have failed to keep former promises. They

have gone counter to the findings of boards of arbitration and other agencies designed to insure fair play. They have crushed former attempts of employés to organize or have sought unsuccessfully to crush existing organizations in the making. They have kept paid agents and other spies in existing organizations. They have caused their spies to rise to prominent positions in union circles. They have bribed union officials to induce employés who would have won to accept terms insuring ultimate defeat. have prevented the exercise of the constitutional rights of freedom of speech, press and assem-They have "framed up" union leaders and sent the innocent to prison. They have suborned witnesses and paid for perjury which convicted innocent men of even murder. They have corrupted judges, legislatures and public executives to act against poor working people.

All these things, and many more, have been done by employers in connection with their dealings with the workers. Not all employers have done all these things, and some have done none of them, but only a few have repudiated the evil acts of other employers. It is the same men that have thus conducted themselves and are now coming for ward with the Big Brother offer. They that have lied in the past will now tell the truth. They that have dealt dishonestly will now be above-board. The deceitful are become truthtellers. The unfair are honorable. Persecutors have turned benefactors. Law breakers are suddenly filled with law and order. Wolves are lambs.

Practically all the advancement made by workers in wages and conditions of work have come through the trades-unions. Bitter experience has taught unfair employers that combat with national unions may result disastrously. Inch by inch the unions have raised their members out of the slough of low pay, up to the high place held by American workers. Employers who have kept unorganized employés beaten down to earth, have had to grant improvements in pay to the same workers when organized in national unions—pay that has meant well-being and happiness, thrift and comfort to hundreds of thousands of homes. In some instances, this power has been perverted by lawless union leaders, which is wrong, but not more so than the lawlessness of unfair employers. Employers dislike and often dread the great unions. They

have always sought to destroy them, and to this end have employed every conceivable means. Lately they have attacked the unions through the United States Department of Justice and through state officials, and paralyzed some of the efforts by working men to improve their They have sought the destruction of pay. unions generally by bringing on hard times, with the thought that when tens of thousands of men are out of work, it will be easy to bring down the power of the workers in order the further to establish their own. They believe that they can beguile some workers by a show of beneficence: and in order to catch them and weaken the morale of the unions generally, the employers come forward smilingly with the Big Brother proposition in one hand, and in the other, behind the back, a dagger for the national There may be some prospect of the Big Brother scheme finding acceptance in some concerns. Perhaps many may take it up. At least it may be expected that a more or less general offering of this proposition may be made throughout the country.

Such a move on the part of Big Business is not without precedent; even in Bible times there is recorded such an incident with its outcome:

"King Zedekiah [suggestive of the big politicians] had made a covenant with all the [working] people which were at Jerusalem [then in trouble with the Babylonians, the move being made in hope of getting a little relief] to proclaim liberty unto them; that every man [employer | should let his manservant and every man his maidservant [male and female employés], being an Hebrew or an Hebrewess [corresponding to Christians today] go free; that none [of the employers] should serve themselves [exploit them] of them, to wit, of a Jew his brother [evidently an old-time Big Brother proposition]. Now when the [financial] princes. and all the people, which had entered into the [Big Brother] covenant, heard that every one should let his manservant, and everyone his maidservant go free [have a greater measure of economic freedom that none should serve themselves of them any more [sounded like a millennium coming], then they obeyed, and let them go [joined the B. B. movement]. But afterward they turned [as might have been expected from employers who were oppressors], and caused the servants and the handmaids, whom they had let go free, to return [the B. B. scheme evidently was not intended to last], and brought them into subjection for servants and for handmaids."—Jeremiah 34:8-11.

Undoubtedly the Big Brother idea is much closer to the Golden Rule than former methods and is what ought to prevail in every industry from president and directors down. If it were made in good faith, it ought to succeed; but being made by men with such a record as many of the large employers have, the outcome will be the same as with the ancient "Big Brothers" of Jeremiah's day. If the present movement rang true and were "100 percent American", all wool and a yard wide, no doubt many troubles that are surely coming might be averted. because the men back of the movement know better, the Big Brother plan will bring them only the greater disfavor from God when it is dropped, and the words that God spoke through the old prophet 2,500 years ago will apply again in the modern replica of ancient history:

"Thus saith Jehovah, the God of Israel [of Christendom too, professedly]: I made a covenant with your fathers . . . saying, At the end of seven years let ye go every man his brother an Hebrew [today, a fellow Christian], which hath been sold unto thee [by the existing economic system]; . . . but your fathers [employers of the past] hearkened not unto me, neither inclined their ear [employers used to work poor people sixteen hours a day regularly]. And ye were now turned fin the Big Brother movement?' and had done right in my sight, in proclaiming liberty [economic] every man to his neighbor; and ye had made a [Big Brother] covenant before me in the house [the churches] which is called by my name [Christian]. But ye turned and polluted my name by dropping a kindly arrangement entered into in God's name] and caused every man his servant, and every man his handmaid, whom he had set at liberty, at their pleasure [if they wanted to make the arrangement], to return, and brought them into subjection, to be unto you for servants and handmaids. Therefore thus saith Jehovah [and He says it again today]: Ye have not hearkened unto me, in proclaiming liberty, every man to his brother, and every man to his neighbor: behold I proclaim a liberty for you, saith Jehovah, to the sword, to the pestilence [now raging in Europe], and to the famine [made inevitable through unfair treatment of American farmers]."—Jeremiah 34:12-17.

When the confusion and obscurity have cleared away and the Golden Age has come, it will be plain that the time of trouble beginning in 1914 and now having some years to run, was not brought about by the workers, nor by the so-called Reds, nor by those who, faithful to the spirit of liberty, have exposed existing evils for their betterment, but by the same kind of people that according to the Bible precipitated trouble upon ancient Jerusalem when it was sacked by the Chaldeans; namely, the financial princes, the clergy and the great politicians of the day in each instance. These men had the power to make things better, to remove causes for divine disfavor; they even did remove one great cause of God's wrath—oppression of the poor—and quickly, with supreme contempt for the Divine Being and for right and justice, kindness and goodness, retraced their steps, proving that they knew better and acted in willful disregard of what they knew they ought to It might be hoped that a better course would be followed in the twentieth century: but human nature is unchanged, and it will obviously be necessary for "important people" to learn still more lessons at God's hand.

Forestry Associations Active

THERE are a great many intelligent, active and patriotic men who are now giving much attention to forestry problems in the United States. They have their associations and conventions at which all of the subjects touched on in this issue, and many others, are discussed at great length. They know that something must be done and done soon. They know, for example, that American forests are being removed two or three times as fast as they are being replaced, and that there is not a seedling tree planted to one in ten thousand of those cut down:

New York State already has a communal holding of about two million acres of cut-over lands which it will endeavor to transform into a valuable forest. Michigan also has appointed a

commission to study the problem.

There is a bright side to the forestry question; and that is that a young, thrifty, planted forest, handled under the now well-known principles of scientific forestry, will produce in a given time a far larger crop of timber than an old established one, and after once established will return an income of ten percent per year.

Children in Hospitals

MOST human beings cause considerable excitement twice in their lives, once when they arrive and once when they leave. Nowadays many of them arrive in hospitals, and this plan has much to commend it. However, there are some disadvantages also; and one of these is that where there are so many youngsters all of one size they occasionally get mixed. Sometimes the tags come off, and in the general mixup it is not always certain which baby belongs to whom. It is feared by those who know that sometimes young mothers have carried away from hospitals babies which they prized highly, but which did not really belong to them.

In some hospitals the nurses are required to keep a strip of surgeon's plaster on the back of each baby, with its name written thereon. A new plan has been suggested, proposing the compulsory recording of the finger prints of all babies as soon as possible after they are born. There seems to be no objection to this. finger prints of every human being differ from those of every other, and these finger prints never change, but remain the same from the cradle to the grave. It is pointed out that if a finger print of Charlie Ross had been taken at his birth he would probably have been identified in later life, and that if finger printing were general there would be no cases of persons lost through lapse of memory. It is said that in one year recently sixty persons classed as unidentified dead were identified by finger prints.

An encouraging indication of the essential goodness of the human family, despite the many illustrations of meanness and depravity which abound, is to be seen in the great interest taken in the perpetuation of the life of children. In the United States, during 1919, the decrease in the mortality of children in the largest cities, over previous years, ranged from 8 percent to 24 percent. This was due, in part, to the fact that there was almost no unemployment in the country during that period.

Desperate efforts are being made to save as many as possible of the children of Europe, especially the new babies, it being understood that for many of those born during the war there is little hope that they can be made into

strong, healthy, self-supporting men and women. The Children's Bureau of Lower Austria has thirty thousand children under its protection, in the care of 2,500 volunteers. This Bureau gives special protection to children born out of wedlock, of whom there have always been great numbers in "Apostolic" Vienna.

The condition of the children of Eastern Europe is so pathetic that when Harry Perelstein, a furrier of New York, visited the Ukrainian district as a member of the American relief expedition, he brought home with him, as permanent members of his family, nine little orphans that he did not have the heart to leave. God bless Harry Perelstein for his nobility of heart! Mrs. Perelstein must not be forgotten, either; for much of the burden of the care of this brood will fall upon her.

Reverting again to the condition of children in hospitals, there seems to be abundant evidence that in most cases of acute sickness the children are better off in a hospital than elsewhere, because the hospital possesses the necessary nursing skill and appliances to care for really sick babies. But as soon as an infant or young child is convalescent, almost any other place is better than a hospital.

Children in Institutions

EXPERIENCE has proven that an institution is the very worst place for children. Those who know the most about institutions, and who give their experience in the medical magazines, point out that in these institutions it is almost certain that infants and young children will be inadequately fed and that they will be subjected to repeated attacks of infectious diseases which they, of all children, are least able to withstand.

The statistics bear out these conclusions. In the State of New York it was found that during four years the death rate of infants under two years of age, throughout the state, was only one-fifth that of the State institutions included in the same areas. Moreover, about one-half of all the children under two years of age that are discharged from the institutions of New York State go out as corpses.

Of 14,525 children under two years of age

discharged from the institutions of the State of New York during the years 1914 to 1918, the number that went out as corpses was 6,583; and out of a total of 12,437 of these children that were discharged, within one year from the time they were received at the institutions, 6,503 went out as corpses.

The Foster-Mother Plan

NOBLE-MINDED physicians who have made experiments on a large scale have proven that the best place to put an ailing child, one that is not downright sick with an acute attack of some disease, is in the arms of a mother; or, if the little one has no real mother, then in the arms of somebody who has the true motherly spirit, a foster-mother. It has been found that personal loving attention has a therapeutic value, and that it does babies good to be handled.

Experience in the boarding out of children in selected districts of Yonkers and Morristown (suburbs of New York city) has shown that if a woman has motherly instincts and fairly healthy children of her own, children will thrive better in her care, even if there is a certain amount of dirt and disorder about, than they will in hospitals or the homes of immaculate housekeepers who are unmotherly. no substitute for love in the life of a child, or in the life of a grown person, for that matter.

There is a certain class of infants that when placed in institutions results in 100 percent of deaths. These are what are known as "chronic cases of extreme atrophy" (a wasting condition). When boarding places for these children were found with good motherly foster-mothers it was found that forty-six percent were saved. These foster-mothers have been paid \$18 per month per baby, plus the cost of the best milk, though higher prices are anticipated hereafter.

Child Health and Education

TN ORDER to get along in the complex life of modern civilization children must be educated, and yet no amount of education can compensate for the loss of a child's health. It is a great problem to know how to deal with the undernourished children of whom we now have in the United States many millions. It is impossible for an undernourished child to concentrate on his studies for even a few minutes without fatigue, and as soon as a child exhibits symptoms of tension and over-fatigue his school hours should be reduced.

It would be highly desirable if all the undernourished could be cared for by private tutors, who would regulate their educational loads individually, but unfortunately these are the very ones whose parents cannot afford to send them to tutors. They must be educated in the public schools or not at all.

Under the circumstances, the best arrangement for such children is to have them sent home at the morning recess, and to require them to take rest and refreshment before returning for the afternoon session. Long sessions are very harmful to such children, putting drains upon their constitutions which they cannot meet.

Not infrequently it happens that a child that is undernourished, and therefore does not get on in school, accomplishes more in a half day in school than when required to attend for a full day. In an instance mentioned by an investigator of this subject it was noted that when the child went to school a full day he made no gain in weight, but when his school session was made a half day he gained two pounds in three weeks.

Playing in the Streets

THE boys and girls of New York city have to play in the streets, because there is no other place for most of them to play. In recognition of this a very fine arrangement has been made, effective during the summer season, of closing sections of certain streets to vehicular traffic between the hours of 3 and 8 P. M., and during the vacation season between 9 A. M. and 8 P. M., so that the children may have a safe place to play. Eighty-nine such sections were opened during the summer of 1920.

The fact that a boy has to play in the streets does not mean that he is a bad boy. The Sage Foundation found this out not long ago. They printed a survey of one of the poor sections of New York, and with it a picture of Willie McCue, labeling the lad, "The Toughest Kid in Hell's Kitchen". The boy was a poor boy, and his parents were poor; but it happened that he was a good boy, a choir boy at that, and when he reached young manhood he sued the Foundation for slander and was awarded \$3,500 damages.

The police and the fire departments of New York city are quite indulgent, as they should be, in their treatment of the poor children of New York during hot weather. The kiddies around almost any fire house can be soaked from the hose on any very hot day; and in some sections gigantic shower baths have been arranged, covering considerable areas of certain streets, into which the children can run at certain hours of the morning, afternoon and evening and be soaked as much as they like.

Child Labor Items

Last July a little girl in New York city, care-taker of three little brothers and two sisters while her parents went to work, committed suicide by jumping from a third story window. She had had some differences with one of these children and anticipated a beating when her father came home. Try to picture, if you can, the burdens that were piled upon that child's body, mind and heart.

The New York State Industrial Commission reports finding in White Plains, a suburb of New York city, during the summer of 1920, scores of children from 4 to 13 years of age, who should have been playing in the open air, engaged—in the interest of wealthy chatelaine manufacturers—in the work of stringing beads at four cents per thousand beads. The work is tedious, involving eye strain, and yields the little workers only about \$2 per week for a full week's work.

The District of Columbia has no truancy law; and statistics show that of the 55,000 children in the District only 43,000 are attending school. It has had a child labor law, but not a good one, and virtually all the women's clubs of the District have been laboring for a new law. When the new law came up before Congress, fixing a minimum of 15 years for the employment of children, a minimum of 18 years for girls in hotels, apartments, theaters and places of amusement, 18 years for boys in quarries, tunnels and tobacco warehouses, and 21 years for girls as telegraph messengers, the board of governors of the local Merchants and Manufacturers' Association sent representatives to oppose the bill. They are welcome to this free advertisement.

On the other hand to encourage boys and girls as real farmers, the New York State Bankers' Association, in 1920, offered prizes of calves,

boars, gilts, rams, ewes, hens and roosters, to the boys and girls doing the best work along certain agricultural lines, as shown by the exhibits at the State Fair held at Syracuse in the Fall.

England in Time of Stress

By Robert Barham (London)

M. Editor: Things are gradually working to a head in England. The efforts of the capitalist press to weaken the power and influence of labor by the Bolshevist alarms still sway the majority of the professional and commercial classes to support the Government, but the ranks of the labor party and the tradesunions are rapidly increasing in numbers.

The London Town Council has decided that at all the Council's affairs, such as band performances in the park, etc., the "Red Flag", the Socialist song, shall be substituted for the British national anthem. This same municipal authority has taken other drastic steps. It has sanctioned the permission of Sunday games in the Council's parks, and ordered that all employés must become trades-unionists or leave their employment.

In the heated debates at the London Town and Borough Councils on the matter of Sunday games, it became apparent that the average labor man is losing all faith in religion and professed churchianity. Religion is being weighed according to the attitude of its professors; and the attitude of the clergy during the war, and the consistency of that attitude with their profession, is a hard problem for the average man to harmonize.

The fact that the seas and waves are roaring with discontent and anger against the "powers that be" has never been so keenly felt in England as in the past few months, and the British Government is fast losing all the confidence that was once placed in it by the people. Since the last general election the Government has lost ten seats, and a huge proportion of municipal bodies now have labor majorities.

The attitude of the churches in all this, with some remarkable exceptions, is distinctly with the Government and capitalist interests. One of the exceptions is in a South-Eastern London Baptist church, where the minister is a confessed Bolshevist, and his congregations each Sunday are probably the largest in South-East London, if not in London.

OLOR & CHARACTER ®

Color and Physiognomy

INDIVIDUALITY is polarized in the face. Emotional, mental, moral, and physical states of being are unfailingly mirrored there. Not only are the passing emotions pictured on this sensitive screen, but the four basic principles of all intelligent and morally responsible life have permanent citadels on the visage of man—in perfect man a veritable uninvadable tetrarchy.

The eyes, "the windows of the soul," are the most delicately responsive centers of perception -inquiring, inviting, retiring, inciting. If there is "nobody home" inside there will be no lights at the windows. No one has lived very long who does not know the power of a single glance to ravish the senses of a whole roomful of people. Yellow is the color of wisdom, and yellow in the normal coloring of the eye has from time immemorial been recognized as indicative of sagacity, astuteness, acumen. As a matter of course, there are no wholly yellow eyes, but it will be borne in mind that yellow is one of the principal constitutents of brown and hazel. Furthermore, it is often observed in a gray eye that yellowish rays emanate as from the pupil toward the circumference of the iris.

A "blue nose" is a symbol of austerity, with perhaps a prudish tinge. Both of these qualities are but perversions of justice—lines of conduct wherein conscience predominates over common sense. The size of the nose, as also the size of the eyes, is not without significance. The small-nosed man



cannot have a judicial mind, whatever his other excellencies may be. And a man whose nose upturns can no more be expected to administer justice than a pug dog can be expected to act as a shepherd.

"Ruby lips" need no introduction as the stronghold of love, the fortress of sensuous perception. Their covering merges from the epidermal tissue of the outer body to the epithelial lining of the inner organism; and on this rosy

frontier more of the world's history than is suspected has been fraught. The thick lip is the sensual lip; the large mouth is the generous mouth. The small mouth knows no love.

Now comes the black ear! What maternal solicitude has been directed to its eradication, and here it is justifying its existence as the base of power. It occupies a position about equally distant from the three other poles. But whatever its color, its size and position and setting are certainly indicative of force. The orifice of the ear in the fully balanced man is said to be in the geometric center of the profile head.

Why Don't Farm-Hands Stick?

CASTE lines in pagan India are not more inexorable than those separating the American goats from the sheep—the farm-hand from his "betters"—in many sections of the country. For the city has nothing on the rural districts when it comes to "society". The farms and the country villages of so-called "Christian" America boast their "four hundreds", the élite of farmerdom; and the farm-hand has no place in these charmed circles.

Many a husky city man has bethought him that in "the freedom of fields and forests" he would find rest for his soul, and has hied him, with his unsuspecting wife, away from factory and flat to take a job as a farm-hand. What did the hopeful couple encounter?

Socialdom is woman's sphere even in the country; and the farm-hand's wife may look from without in, but may not enter. The man works, and "the woman pays". If an attack of the "back-to-the-farm fever" gets a city man able to buy a farm, he and his wife may find some social joy; but over the farm-hand's place hangs a sign, "Abandon hope all ye who enter here".

Sixty dollars a month with "cottage" and garden thrown in looks good to many a young couple tired of the grind of factory and a home as a city cave-dweller. The youth "hires out", and comes to a "home", with the windows half out, dilapidated paper on the walls, a leaky roof, a dry well and a tangle of weeds for a "garden". It is woman's work to tidy things up, while "hubby" works from 5:30 a. m. to 8:00 p. m.; and the ambitious graduate of a city school system gets the thing done somehow. Training in household economics and practice

for a few years over a city gas-range has made a proficient housewife, but the neighbor's children may not run in for a cooky or a story without risk of a "licking" at home for wandering over the forbidden social threshold. In education and connections both farm-hand and wife may be the equals of any one, but not in the country.

The itinerant butcher on the weekly round condescends not to turn in to the farm-hand's humble home, but demonstrates his superiority by driving past. Hence no fresh meat to keep up needed strength, except by a tramp to the neighboring village. The farm-owner somehow had a bad memory about getting anything "in town" for the "hand", except once when he acted as though it were a humiliation, after which his comings and goings were known only when fin-The furniture might come to the fivemile-away station and the first lot be teamed in by the farmer, but never again; and though horses and wagons might be out of use for halfdays at a time, the second load would have to be trucked out to the "cottage". Garden tools were lying about, but the farm-hand must buy his own. There were plenty of seeds for a garden. but none for the farm-hand's garden. Without a cow skim milk would have been a boon, but it was fed to the hogs. Fruit rotting on the ground would have meant so much. The long tramps to the store seemed needless, with the farm horses idle and the Ford in its shed.

City work has its Sunday rest, but no such relief for the farm worker. Church in the country is for the elect alone. If the "hand" did not have to do some heavy work, there was plenty of odds and ends to be done on days when the farmer and his family went to some outing. An almost universal social aloofness characterized the attitude of farm-owners and their folks toward the farm-hands.

Is it any wonder that on so many farms the work is being carried on by old men, undesirables, loafers and semi-tramps? The self-respecting, able-bodied and able-brained youth and his wife—the equal of any of "the people"—get tired of being social and economic lepers. They hie them to the better conditions of the city and factory; the farm has one less "hand"; and the food problem advances a tiny step toward the inevitable crisis.

Some day the rural districts will become Christianized—not "perhaps", but of a certainty; for the Golden Age is at hand, when all

the people will become men and women, when the Golden Rule will be both the law and the custom of city and farm.

Then, however, every farmer will have his own farm to work. Farms will not be so large as now, and will be worked for service and not for profit.

Twenty-Dollar-a-Ton Coal

WITH anthracite \$20.00, or thereabouts, a ton and scarce at any price, the coal problem comes right home to every house in the American anthracite-using belt. Coal is still heat, cooking, salvation from death by winter cold, a necessity for the preservation of health and life. Without coal much of America would be uninhabitable in winter; its scarcity is a great hardship.

The per capita use of coal rose from .2 ton in 1850 to 3.55 tons in 1900 and 6.44 tons in 1918, and a slightly larger figure in 1920. Including all coal used for every purpose the amount in pounds for each person in 1918 was:

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Industrial
Railroads
Domestic
Coke 902
Electricity 345
Export 324
Coal mines 132
Steamships 118
Gas 42
Total $\overline{6.880}$

The amount of coal in 1919 was: anthracite, 86,200,000 tons, bituminous, 458,063,000 tons. In 1917, when the anthracite production was 82,500,000 tons, it was used—for domestic purposes, 50,000,000 tons, for industrial uses, 20,000,000 tons, for railroads, 6,500,000 tons and for export 6,000,000 tons.

There are plenty of mines, an abundance of coal ready for mining, and more than enough coal miners to extract the coal. The chief causes of scarcity of coal are the low pay of the miners—95 cents a ton in anthracite fields—and the shortage of railroad cars to load with coal and carry it to market. The first difficulty causes strikes and diminished production of coal. It should be easily remedied, with the more than \$19.00 additional paid for royalties, mining expenses and profits, railroad freights, and for

middlemen to sell the coal to one another and to the public. A dollar less paid to these parties and given to the miners would probably stop most of the industrial difficulties—and then would be little enough out of the total paid by the consumer. But the persons "above" the coal digger must have new automobiles, better houses and palaces, and more and more for other things; for human nature in them, as in others, holds on to the last cent obtainable. Besides, if more coal were mined, the price would fall, and less than the present \$19.00 would be distributable. If any of them are profiteering, a profiteer is very hard to find, and still harder to convict of violation of more than the moral law.

The supplying of railroad cars enough is not an immediate possibility, because it takes time to build cars sufficient even to transport the existing 10 percent shortage of coal. number of new cars needed is estimated at 100,000, to build which would be a formidable task for the car builders to attempt offhand, with other business to be taken care of. One might imagine that when times are as hard as at present and so many men out of work, it would be possible for the railroad equipment concerns that make cars to provide work for the unemployed. But that is not possible in a condition of falling prices; for cars are not built merely to be used, but to make a profit on. The required cars cannot be undertaken until times grow very hard and prices reach the bottom. As soon as that happens, cars can be made at a profit until the next period of declining prices. Meanwhile the coal shortage continues.

It is suggested by mechanical engineers that in stationary-engine plants, using 30.8 percent of the coal, 25 percent of the coal is wasted up the chimney, and that proper training of firemen would save enough to make up half of the 10 percent scarcity of coal—this if only 20 percent to 23 percent of the wasted coal were saved at the grate. So colleges are providing extension courses to teach firemen how to save coal; they are reaching perhaps one or two percent of the coal wasters in the industrial field. Employers are reaching more coal users; and perhaps something may be done immediately in keeping waste down, though this seems scarcely necessary when so many plants are closing down and

not using coal, a process which alone should make up much more than the shortage.

It is a very poor way to save coal—to shut down half the plants and put half the men out of work; but it is obvious, too, that men out of work cannot buy as much coal as men at work. which will save considerable coal for those that may retain their jobs. Housewives need no further incentive to be thrifty than the \$20.00 price, but few of them know how to apply fuelsaving methods in kitchen practice. As they use 16.8 percent of the coal, missionary work among them might save a little. The railroads, which burn 25.2 percent of the coal, have always been fighting the coal waste problem, but the locomotive is naturally so wasteful a steam-plant that not a great deal can be accomplished in that direction. If exports were shut off by an embargo, it would save half the shortage; but such action would accentuate the foreign trade problem, lose good foreign customers and do more harm than it would help. Very possibly that supreme conserver, the Federal Fuel Administrator, may step in and reduce the coal business to a wartime basis, as the only feasible immediate solution of our present difficulties.

Then there would be the former lobbying by all sorts of concerns to be rated as "essential", and the men with the right influence and enough of it would be able to present sufficiently "convincing" arguments. Another scheme is for coal to be furnished only to efficiently operated plants. This would be good for efficiency engineers, but bad for plants having strong labor unions: for in the present temper of those in power the very name "union" is as a red flag to a bull. It would furnish an opportunity, however, to further reduce the unwelcome power of the trades-unions -almost the supreme present objective of a united manufacturing fraternity. As the Government formula runs: 'Why should this man be allowed, through simple carelessness, to burn twice as much coal as he needs, making his product (if its selling price is based on its cost. as it should be) cost more to its users, using up man-power and railway facilities to get coal to waste while others suffer for the want of it? Let us hope, however, that it will not be deemed necessary again to fill the land with inquisitors and arbitrary and often venal bureaucrats judging who is "efficient" and who not.

Search for New Sources of Power

EARTH'S gradually failing fuel supplies, whether of wood, coal or oil, and the difficulty which has always existed, and exists more today than ever before, of finding those who wish to cut wood for the rest of us, and to mine our coal and drill for our oil, is stimulating interest in the problem of what mankind is to do when present supplies are exhausted.

There is no question of the need of progress in the direction of finding new sources of power. Everybody knows that present supplies of fuel are being worked out, and that the prices of all kinds of fuel have risen so that we are now paying three to four times as much as we did for the same articles a few years ago.

Thus, in California, for example, the farmers need gas-engines for pumping the water needed in the irrigation of their farms, and they use these engines for washing, churning and other heavy work once done by hand. A few years ago the annual cost for fuel for supplying these engines was around \$250 per year per farm; now it is around \$1,000 per year per farm and has become a great burden which can scarcely be borne.

Water-Power Development

OBVIOUSLY, one of the first forms of power to receive attention is one with which we have long been familiar and which has been used from earliest history; and, appropriately, we find renewed interest in the construction of hydro-electric plants in many parts of the world.

Water-powers are expensive to install; but once installed in a proper location, they are very economical and efficient. In the combustion of coal only ten percent of the power is available, but in a properly built water-power plant ninety-three percent of the power is utilized.

America has not given the attention to the development of her water-powers that might have been expected, because she has had so much coal, in all parts of the country; but there are nevertheless some very large and widely utilized plants. The plant at Niagara Falls has recently been enlarged by the deepening of its hydraulic canal; and it is estimated that the additional power thus provided each year is as great as would be that obtained from a train of

coal four hundred miles long, requiring seven hundred locomotives to haul it.

Argentina, as heretofore explained in The Golden Age, has appropriated forty million dollars for the development of the water power of the Iguazu, the streams which fall from the Argentinian plateau into the Amazon basin; and China is installing at the rapids of the Yangtse Kiang river the largest hydro-electric plant in the world.

Bible students are specially interested in the power canal which is proposed to empty a portion of the waters of the Mediterranean into the Dead Sea, a drop of 1,300 feet. The power which would thus be generated would be sufficient to pump the sweet waters of the Sea of Galilee all over Palestine and to turn the land into the garden which its soil shows that it might readily become, and which history shows that it once was, and which prophecy shows that it is yet to be.

The Palestinian project calls for merely enough water to be turned into the Dead Sea to hold its level at a height a few feet above the present level. Evaporation is rapid and will take care of a very considerable body of water every twenty-four hours. But even a rise of a few feet in the waters of the Dead Sea is sure to have a marked effect upon the desert region which surrounds it, even as the flooding of Imperial Valley in Southern California has changed the climate of adjacent regions. Palestine will be benefited not only by the sweet waters which are pumped over the surface of the land, but also by changes in the atmosphere which will bring about a greater natural rainfall and, in general, make the country a more desirable place in which to live.

Power from the Winds

AS WATER powers must be built only where the supply of water is fairly steady, if they are to serve the needs of mankind satisfactorily, and as they have in many places been abandoned because there was either so much water that the dams were washed out or so little that very little power could be obtained from them, so the wind as a source of power is so inconsistent in most places that it is not looked upon as very dependable, and therefore is not used to any extent.

There are certain places where the winds are quite brisk and fairly constant, and in these places windmills are in favor and might be much more widely utilized than they are. The proposition has been made that in places on the seacoast where there are high cliffs and where the winds are fairly constant, giant windmills might be utilized to pump water from the sea into huge impounding reservoirs, the waters from the reservoirs to be used in operating hydro-electric stations at the foot of the cliffs.

On the great plains of the West there are frequent winds, and a windmill for raising water is a feature of almost every farmstead. At Hoople, North Dakota, the home of Governor Frazier is heated and lighted by a windmill. The windmill when in operation drives a dynamo, and the power generated by the dynamo is stored in batteries in the cellar until needed for use. The speed of the windmill is governed by the blades, which open in a gale and close in light breezes.

Power from the Moon

THE hard time which the French government had in getting coal last winter is causing it to give close attention to the problem of utilizing the power of the moon, which every day raises and lowers billions of tons of water in the tides that wash the shores of the French republic.

The plan is to construct huge concrete reservoirs, the locks of which will be thrown open at high fide to receive several hundred thousand horse-power of potential energy in the form or sea-water. Twice each day, as the tide ebbs, the contents of these reservoirs will be transformed into electric power by hydro-electric plants, and stored in accumulators. The tides run very high on the coast of France, and the idea would seem to be quite practical.

It is estimated that a single reservoir of two hundred acres will furnish fifteen thousand horse-power, and that, if the plan is carried out, enough horse-power can be developed in this way from the tides to electrify every factory, railroad and farm in France, heat all the homes and offices, and furnish all the power required.

A more direct device for obtaining power from the tides, but not capable of such wide use, we think, is the work of Joseph Clarkson, a Manchester engineer. This device, which has been tried out in the River Mersey, and found to work, is a tidal turbine consisting of rows of

buckets attached to an endless chain, the buckets on the lower side being in the water while those on the upper side are out. The flow of water keeps the chain rotating. The whole is fixed on an anchored floating framework, and is connected in such a way that the rotating chain drives a dynamo.

Power from the Sun

STEAM plants, operated wholly by heat obtained directly from the sun, have been in existence for a long time. One of these is to be seen at Pasadena, California, and another at Cairo, Egypt, both the work of an American inventor.

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Great parabolic reflectors, or rotating mirrors, are used to focus the sun's rays on the boiler. The heat thus generated is so intense that water in the boiler boils in a third of the time required when the boiler is mounted over a furnace and heat is applied in the usual way. The obvious difficulty in the way of a wide use of this form of power is that there are not many places where the skies are as free from clouds as at Pasadena and Cairo, and that in the northern latitudes the sun's rays fall so obliquely that their heating power is greatly reduced. The plan would not do at all for cloudy climates.

A sun engine that seems to us to give better promise is that invented by Honoré Wiltsie, editor of the *Delineator*, who has made use of the principle that sulphur dioxide steams at a low temperature and may be caused to do so by the heat imparted by hot water.

In Mr. Wiltsie's engine the water is heated by being caused to run down inclined panes of glass, under glass covers which are exposed to the rays of the sun. This hot water is used to heat sulphur dioxide until the dioxide steams. The dioxide then runs a steam engine, and the latter drives a dynamo from which power may be taken for any desired purpose.

This arrangement of Mr. Wiltsie's produces results. It pumps the sulphur dioxide and the hot water back to the starting point, so that nothing is wasted, and runs day and night furnishing all the light and power needed at the Arizona ranch where it is in operation. It is enabled to run at night because the water heated by the sun remains hot throughout the night, sufficiently hot to cause the dioxide to steam. This device seems to have considerable possibilities.

Another method which it is hoped to utilize in obtaining power from the sun is to convert the sun's heat directly into electricity by the use of what is called the thermopile. It is well known that when several sheets of metal of different kinds are connected together and heat is applied to one or more of the sheets, but not to the others, an electric current is generated. We have not yet heard of any practical applications of this principle, but it is reported that a Philadelphia engineer is giving the matter attention and may produce something worth while along this line in the near future.

Power from the Earth's Interior

WE HAVE before mentioned in The Golden Age the plant at Lardarello, Tuscany, Italy, where a heating plant of sixteen thousand horse-power is distributing electric current to Florence, Livorno, and Grosseto. The heat is obtained by boring holes in the earth's crust, in volcanic regions. Although the plant at Lardarello has been utilized to generate power by means of turbines, it is said to be objectionable for this purpose because it contains sulphuric acid and other substances which corrode metals, especially iron. Another deep hole is being sunk near Naples in the hope of obtaining a supply of power for factories in that district.

Readers of The Golden Age will remember our mention of the twelve-mile shaft which Sir Charles Parsons has urged the British government to sink in the earth, at an estimated cost of twenty-five million dollars. The cost would not be so great, when it is considered that it was much less than one day's heavy fighting in the World War.

If by the drilling of such a well it should be found that a permanent, stationary and reliable source of intense heat can be established anywhere by the mere drilling of a hole, the problems of heating, lighting, transportation and power will all have been solved. The mining of coal would no longer be necessary, the production of manufactured goods would be simple, and artificial stimulation of vegetation would be possible in any climate.

We have not the specifications as to how Sir Charles would propose to sink a well to such great depth. The deepest oil well ever sunk is less than one and one-half miles deep. Two attempts to go below the one and one-half mile limit have resulted in the loss of the drilling tools, recovery of which was found impossible.

Power from Chemistry

NEW YORK chemist, P. J. Chasler, announced in April that he had discovered a method of making alcohol by means of which four times as much alcohol can be obtained from the same amount of raw materials as formerly. and the cost reduced to five cents a gallon. His claim is that by his new method four gallons of alcohol is obtained from each one hundred pounds of vegetable matter containing starch. sugar and cellulose. This is a message of some hope to the automobilist, who sees gasoline mounting higher and higher. Dispatches from Webster City, Iowa, state that Arthur Bundy of that city has compounded certain chemicals, which are inexpensive and all about us everywhere, by means of which the oxygen of the air is used for power, and that by means of this power, without a cent's worth of oil or gas, he drove an Overland truck about the city all day at a total expense of five cents; and that, moreover, the chemicals used are not explosive and a child may drink them without injury. We wait to hear more about this.

Power from Magnetism

It IS the claim of Alfred M. Hubbard, a nineteen-year-old boy of Seattle, that with a small coil of wire about six inches in diameter, surrounding a permanently magnetic core eight inches long, the entire contrivance being easily carried on a man's hand, he has succeeded in intercepting the magnetic force present in the atmosphere, and changing that force into electricity.

The little machine lit an ordinary incandescent lamp to a ruby glow, yielding for a long time an uninterrupted flow of at least eighty. volts, and Hubbard claims it would have done this continuously until the insulating material on the wires decayed or the wires rusted off at the terminals. The whole machine is only a little larger than a cigar box and weighs but The polarity changes at the twelve pounds. rate of one hundred and twenty times a second. When connected to a twenty-five horse-power motor the apparatus caused it to jump into life, developing its full capacity and power. An investigation of the work of the machine was made in the presence of a number of Seattle scientists late in the year 1919. Hubbard has now secured his patents, according to press reports, and is organizing for manufacture.

It is estimated that if Hubbard's machine, built in a length of half a foot, can make a bulb glow, an instrument eighteen feet long would drive the world's largest steamship; and that it would replace every gas and steam engine in the world, put every coal mine and oil well out of business, enable every home to heat and light itself and would fit automobiles and airplanes to develop their own power as they rush along, independent of fuel of every sort.

Recognizing that the earth is really a great dynamo, operating through a field of energy produced by the radiation of the sun, a scientist has recently proposed that if inch or half-inch wires to the number of about two hundred and fifty could be strung from north to south over the earth's surface, the oceans being traversed by cables, enough power could be obtained by tapping these wires to settle the power problem for all time. In this theory the earth is simply an armature in a great electric motor.

Electric Power Transmission

ALL can see that the transmission of the power from the point where it is generated to the point where it is needed is as important as the generation of it. Great progress is being made in this direction. The Chicago, Milwaukee and St. Paul Railroad Company is leading in the transmission of electric power for railroad purposes. It now has a section of 209 continuous miles operated by electricity in the state of Washington and 440 continuous miles operated by electricity in the state of Montana.

Its latest type of electric passenger locomotive has fourteen axles, on each of which are mounted many motors. Each of these axles turns one set of driving wheels. The locomotive is 78 feet long, weighs 267 tons, has a speed of 65 miles per hour and has a horse-power of 3,240. In an actual test one of these electric locomotives, pressing head on against two of the heaviest and fastest passenger engines of the New York Central Lines, pushed them steadily backwards, although both engines, with full steam up, were working as hard as possible in an effort to go ahead. This demonstration took place at the Erie, Pennsylvania, shops of the General Electric Company. When going down hill this great electric engine stores up power to take it up the next hill.

Thomas A. Edison and other engineers are claiming that the time has come for burning all coal at the mines and shipping the power over wires, instead of handling such a bulk of ashes and other useless matter as by the present method.

Belgium recently entered into an agreement with Italy to supply sixty thousand tons of coal per month, which, however, was to be transported by Italy itself. As Italy could not at first furnish either cars or boats for the shipment of the coal an Italian engineer took up the Edison suggestion, urging that the coal be burned in the Belgian mining districts and the power be transported seven hundred miles over the Alps Mountains, at a tension of 150,000 volts. The Italian engineer estimated that, unit for unit, power can be delivered in Italy in this way for a little less than half of the cost of transporting the coal itself. An English company has been set up in South Africa to carry power a like distance from the falls of the Zambesi.

Wireless Power Transmission

T IS even considered possible to transmit power by wireless, so that vehicles, ships, trains, aircraft and the like may be propelled without having to include a source of power, This it is hoped to do by using ionized light beams as elevated conductors. Wireless energy would be sent vertically into the heavens along the ionized beams sent up by a searchlight. This wireless energy would be in the form of ultraviolet rays. These powerful Tesla currents would result in an ionized stream of air which could be tapped at a considerable distance and utilized by any vessel or plant equipped with proper receiving apparatus. This suggests the possibility of a time coming when work of any kind can be done almost anywhere by the mere pressing of the right button.

In July the largest wireless station in the world was completed at Bordeaux. The French government will use the eight towers of this installation to send messages half way around the world. The towers are eight hundred feet high, and weigh about five hundred and fifty tons apiece. It is estimated that by these towers messages can be picked up from points twelve thousand miles distant, and as the earth

is only twenty-five thousand miles in circumference it virtually means that every point on the earth's surface is within reach of this station.

Atomic Power Greatest of All

THE discovery of radium by Mme. Curie upset all the previous theories regarding the composition of matter. No one has vet been able to break up the atoms of any element: but when Mme. Curie succeeded in isolating radium it was in full process of decomposition, and shows what is possible in the way of providing sources of power infinitely more effective than

any man has vet utilized.

By measuring the heat given off by a small quantity it is estimated that one gram of radium, if its energy could be liberated at once, contains as much power as would be derived from the burning of three million tons of coal and its conversion by the usual methods into electrical energy. How the explosion of the atoms of radium occurs is not vet known; but it is conjectured that radium is merely uranium from which certain particles have been ejected, and that after it has become radium the discharge of other particles now under way will convert it into lead. By similar methods of reasoning and investigation it is conjectured that in due time it may be possible to change lead into mercury, mercury into thallium, and thallium into gold.

Professor Frederick Soddy, Lee Professor of Physical Chemistry at Oxford, and other scientists, have made calculations of what could be done with various substances if their atomic energies could be harnessed, all based upon the known characteristics of radium; and their estimates are so extraordinary as to be beyond

the pale of comprehension.

It was estimated that a small piece of chalk, such as one might hold in his hand, would furnish enough power to raise a million tons three hundred feet; that an ounce of matter would raise the German fleet from the depths of the sea and place it upon the tops of the mountains: that common substances, such as salt, sugar and clay, would produce a thousand times more energy, bulk for bulk, than the highest explosives known; that a cubic foot of ether, if it could be harnessed, would contain enough power to drive every engine and every furnace in the world for a century.

Noting these facts, the dreamers (and the

world owes much to its dreamers) are looking forward to the day when every steam and electrical machine will be junked, replaced by engines of vast power and tiny size; when great flying machines will silently swarm in the skies. traveling with the speed of sound, and supplanting all other forms of travel. It may be so: but it seems to us that the problem of landing safely will be just as great as ever, and that if an engine, propelled by such a power, should backfire it would scatter the engine parts, the airplane, its passengers and its freight generously over a good-sized section of the planet.

Back of all the sources of power is the great God of the universe, the maker of all other forms of energy, and the sustainer of all the laws which keep the planets in their path as they glide about the sun, and which control the comets and suns as they go flying with incredible speed through space. To the extent that He lets man into some of the simpler secrets of His universe, to that extent man will succeed in perfecting these or other sources of power. It is all in God's hands. If He sees that it is for the welfare of the human family to have all their work done for them by atomic energy He can let the light in on the subject; and He will do so at the right time.

More Large Families: H. A. Seasholtz

MR. EDITOR: In response to your invitation, I send you particulars of some larger families than that of Mrs. Virginia Neal, mentioned in a former issue of The Golden Age.. In the first three instances the number of mothers is not stated.

PARENT'S NAME	PLACE	DATE	CHILDREN
Rev. Dr. Erskine	.Scotland	1760	33
Mr. Greenhill	.Langley		39
David Wilson	.Indiana	1850	47
Mme. Frescobaldi	.Florence	1570	52

Mme. Frescobaldi had never less than three children at a birth.

Fedor Vassileff, Moscow, 1782, had 83 children then living, when pensioned by the Czar. He had 67 children by his first wife, at 27 By his second wife he had 18 more births. children, in 8 births.

Lucas Saez returned to Spain from the United States, in June, 1883, with 37 children, 79 grandchildren and 81 great grandchildren, his eldest son being aged 70. His total descendants then living were 107 males and 90 females.

In Foreign Lands—Egypt and the Great Pyramid: By J. F. Rutherford

PALESTINE is designated in the Scriptures as "God's land". In that land God has staged the greater part of His wonderful drama looking to the redemption and restoration of mankind.

Egypt lies adjacent to Palestine. In Biblical symbology Egypt represents the world of mankind under the dominion of Satan, "the god of this world". (Hosea 11:1; 2 Corinthians 4:4) We should expect, therefore, to find in Egypt many things which represent Satan and his works. Other Scriptures and the physical facts show that Satan has attempted to counterfeit every feature of the divine plan; and some of these evidences appear in Egypt to a marked degree, but these have been little understood by the world in general.

Cairo, the capital city of Egypt, is built practically upon the site of the home of the ancient Pharaohs. This city and the land about it have been the scene of much history-making of interest to Christians and non-Christians. The philosophers of the world search the ruins and the monuments of Egypt for relics, and marvel and expatiate upon the greatness of prehistoric man, who produced them. The Christian, in the light of divine prophecy as now revealed, looks upon Egypt, its ruins and monuments, from a far different viewpoint.

The Christian marks that in this land Abraham sojourned for a time; that in Egypt God caused Jacob and his children to reside for a much longer period and finally delivered them out of the land of their oppressors by the hand of Moses; that Joseph, one of the sons of Jacob, there filled a great office next to the king, and by his wisdom and ingenuity saved the people during a time of great famine; that into this land Jehovah sent the babe Jesus and out from this land called Him in due time; and that all these events foreshadowed the coming of other events of far greater importance.

Great numbers of searchers for information visit Egypt and are always invited by the residents to view the ruins, the temples, the pyramids and the museum; but the one object of Egypt that is of such great interest to the Christian, and that shortly will have increased interest for the peoples of the world in general, is the Great Pyramid of Gizeh. And why is

this so? Because the prophet of God made a record of this pyramid as being a mighty witness, first to the Christians and later to all the peoples of the world. Even many who claim to be Christians have overlooked the fact that the prophet Isaiah says: "In that day there shall be an altar to the Lord in the midst of the land of Egypt, and a pillar at the border thereof to the Lord. And it shall be for a sign and for a witness unto the Lord of hosts in the land of Egypt: for they shall cry unto the Lord because of the oppressors, and he shall send them a savior, and a great one, and he shall deliver them. And the Lord shall be known to Egypt, and the Egyptians shall know the Lord in that day, and shall do sacrifice and oblation: yea, they shall vow a vow unto the Lord, and perform it. And the Lord shall smite Egypt: he shall smite and heal it: and they shall return even to the Lord, and he shall be intreated of them, and shall heal them."—Isaiah 19:19-22.

This prophecy, in its relation to Egypt, has a two-fold fulfillment. The altar of the Lord here mentioned is the Great Pyramid, builded in the literal land of Egypt. Egypt, as already stated, symbolically means the world of mankind. The prophecy shows that a time would come when the Lord and His plan shall be known in Egypt and that "the Egyptians shall know the Lord in that day". "In that day" doubtless means the day of the Messianic reign, which will begin with the passing of the old order. The old world, or old social order, began to end in 1914 and is rapidly passing away, and the Lord has taken unto Himself His great power and now reigns. (Matthew 24:3-14; Revelation 11:17, 18) Since we have come, therefore, to the beginning of "that day", it is quite appropriate to call attention to this Great Pyramid, with the expectation that the peoples of earth will now begin to find a deep interest in it.

Some members of our party had visited the Great Pyramid on former occasions, and some had not before seen it; but all were anxious to examine it. Several days were spent viewing the outside and the inside of this wonderful structure, and pictures were made from different viewpoints, both outside and inside.

There is a number of other pyramids in the vicinity of Cairo and along the Nile; but it is

the Great Pyramid of Gizeh that is referred to by the prophet in the language above quoted. This pyramid is located on an elevation overlooking the Nile, and is situated between eight and ten miles southwest of the present city of Cairo. It is interesting to note that the delta of the Nile forms a seacoast in the shape of a true quarter-circle, with the Great Pyramid situated exactly in the center of that circle.

In 1868 Mr. Mitchell, who was making a coast survey for the United States, discovered the location of the Great Pyramid in this fanshaped delta. He said: "That stone witness is in a more important physical situation than any other building erected by man". The above prophecy of Isaiah corroborates this statement.

The measurements of the Great Pyramid fix the date of its construction. Professor C. Piazzi Smyth, by astronomical calculations, together with the other measurements, demonstrates that the Great Pyramid was built in the year 2170 B. C., at which time the Dragon star (which is a symbol of evil) was exactly in line with the descending passage of the Pyramid. The inference drawn from this is that the downward passage pictures the course of mankind in sin, under the dominion of Satan, the prince of the power of the air, the god of this world.

The Great Pyramid covers an area of approximately thirteen acres. It is 764 feet broad at its base, and 486 feet high. Its estimated weight is six million tons; and to move it would require six thousand locomotives, each drawing a thousand tons. There are stones in the structure thirty feet in length, weighing approximately 880 tons; and although no mortar was used in laying these stones, their surfaces fit together so closely that the place of union can scarcely be discerned. It is certainly the most remarkable building in the world.

Taking into consideration the nature of its construction and the material used, many have wondered how these great blocks of stone were laid into place. There is no record that at the time it was built there was any powerful machinery for lifting these stones. From the physical facts about the Pyramid I make the following suggestion as to how these stones were placed:

After the first course of stones was laid on the solid rock foundation, the sand could have been piled up even with the top of that course and another course of stones put in place, and then the sand piled up even with that course. Skids laid on the sand would serve as a means for drawing these great stones up. And this process of piling up the sand and drawing up the stones on skids, being continued, would ultimately bring the builders to the top. The great mass of sand and debris around about the Pyramid seems to corroborate this view; and we should find some reasonable way in which the structure was erected. While Christians are fully convinced that it was constructed under the supervision of Jehovah, it is preferable to believe that the Almighty would employ natural means for its erection.

That we have reached the end of the old world and the beginning of the new there can be absolutely no doubt. This journal has heretofore published much proof on this point. That God has a well appointed plan which He is performing in His own good way there can also be no doubt; and He promised that this plan would be made known unto man in His due time. Jehovah stated through His prophet Daniel, with reference to the time of the end where we now are, that then "knowledge shall be increased". (Daniel 12:4) Seeing, then, that we are in the beginning of "that day", and that the Lord promised that the peoples shall know Him in that day, we should reasonably expect to find in this Pyramid much corroborative evidence of the divine plan.

The Pharisees claimed to represent Jehovah, occupying a position in the social order of their time as the ecclesiastical leaders and teachers. These Pharisees were blind guides of the blind; i. e., neither the leaders nor the led understood God's purposes, because the Pharisees had forsaken the spirit of the Word of God. When Jesus made His triumphant entry into Jerusalem, the whole multitude began to praise God with a loud voice, and the Pharisees said to Jesus: "Master, rebuke them". And Jesus answered: "I tell you, if these should hold their peace, the stones would immediately cry out".—Luke 19:37-40.

The counterpart of the Pharisees is found in the clergy of the church nominal, Cathelic and Protestant, of our day. Foreknowing the course these would take now, the prophet of the Lord wrote: "The Lord hath poured out upon you the spirit of deep sleep, and hath closed your eyes rulers, the seers hath he covered, and the vision [understanding of God's plan] of all is become unto you as the words of a book that is sealed.

... Wherefore the Lord said, Forasmuch as this people draw near me with their mouth, and with their lips do honor me, but have removed their heart far from me, and their fear toward me is taught by the precept of men: therefore, behold, I will proceed to do a marvelous work among this people, even a marvelous work and a wonder: for the wisdom of their wise men [clergy] shall perish, and the understanding of their prudent men shall be hid."—Isaiah 29: 10-14.

Jesus commissioned His followers to preach the coming of His kingdom as the panacea for the ills of mankind. He taught His followers to pray for its coming. Now at this end of the world we find that the great majority of the clergy have abandoned the teachings of the Lord and have joined hands with Big Business and professional politicians in the formation of a man-made thing, the League of Nations, of which they say: "This is the political expression of the kingdom of God on earth". Verily, the prophecy is fulfilled concerning them; and verily, the time is come for God's great stone in the world (the land of Egypt) to become a witness. With keen interest, then, it should be examined and studied.

The entrance to the Great Pyramid is on the north side, opening upon a long descending passage, which continues downward until it reaches a subterranean chamber in the natural solid rock. That chamber is wide, but has an uneven floor. Symbolically this represents the course of the human race. Shortly after Adam was created he violated God's law and was expelled from Eden; and his course and the course of his offspring have been downward since, even to the present time, when we have reached a condition of trouble and unrest which is pictured by the uneven floor of the subterranean chamber. Now we have come to a time when ecclesiastically, politically, financially and socially, mankind is in trouble and distress. The war, famine, pestilence, distress of nations, perplexity, social unrest, revolution and threatened anarchy are clearly pictured by this subterranean chamber.

The descending passage is nearly 340 feet in length, the greater portion of which is cut through natural solid rock. About one-fourth of the distance from the entrance, this descending passage is intersected by the first ascending passage, which, like the descending passage, is low (about four feet in height) and which continues upward for a distance of 1542 pyramid inches and opens into the grand gallery. The grand gallery is narrow at the bottom, but widens near the top. It is seven times as lofty as the first ascending passage.

Thirty-three and one-half inches from the end of the first ascending passage one encounters the "well". This has the appearance of having been once closed and later opened by an explosion from beneath. The "well" continues downward in an irregular course and intersects the descending passage near its end, in the natural At the intersecting point of the first ascending passage and the grand gallery is a horizontal passage leading into what is designated the Queen's chamber. At the upper end of the grand gallery is a low horizontal passage leading into the ante-chamber; and beyond the ante-chamber, another low horizontal passage which leads into the King's chamber. It is of great interest to notice the symbolic meaning of these passages and how they corroborate, first the downward course of man, then God's provision for man's redemption and restoration. and the exaltation of the church to glory, honor and immortality.

The key to the whole situation is the "well". Since the well has the appearance of having been opened by an explosion, it pictures our Lord's death and resurrection, through which He brought life and immortality to light. A Scotchman, Robert Menzies, in 1868, after examining the Great Pyramid, wrote with reference to the well: "From the north beginning of the grand gallery, in upward progression, begin the years of our Savior's life, expressed at the rate of a year for an inch". The 33½ inches here picture the time from Jesus' birth as a babe at Bethlehem to His death on the cross.

The downward passage, as we have already suggested, pictures the downward course of humanity from the expulsion of Adam and Eve from Eden to the end of the present evil order.

The first ascending passage, which intersects

the entrance or descending passage, together with the granite plug (which closes the lower end of this upward passage), by measurement exactly pictures the length of the Jewish age. The first ascending passage, therefore, represents the covenant God made with the nation of Israel at Mount Sinai, by which covenant He offered to give them life if they would keep it. They were unable to keep the covenant; hence unable to gain life, symbolized by this ascending passage. It was life on the human plane, of course, that had been lost by Adam; and God's plan provides that there is no other name given under heaven whereby men can get life except through Christ Jesus.

Jesus himself said: "T am come that they might have life, and have it more abundantly". (John 10:10) St. Paul said: "Jesus Christ, by the grace of God, tasted death for every man". (Hebrews 2:9) And again: "There is one God, and one mediator between God and men, the man Christ Jesus, who gave himself a ransom for all, to be testified [to all] in due time". (1 Timothy 2:5,6) The death and resurrection of Jesus constitute a guarantee that all men shall have one opportunity for life on the human plane (Acts 17:31): and ultimately those who obey the terms upon which life is offered will be restored to perfection.

This restitution blessing is pictured by the horizontal passage which extends from the upper opening of the well to the Queen's chamber. But these blessings of restitution can come only in God's due time, and will come during the Messianic reign.

Before the beginning of these blessings for mankind the Christ, Jesus the Head and the church His body, must be completed and united in glory. The grand gallery therefore pictures the Gospel dispensation, or period of time in which God has visited the people of earth to take out "a people for his name". (Acts 15:14) Applying the rule of measurement—an inch for a year—the grand gallery indicates the length of the Gospel dispensation. It is narrow and steep of ascent and has been difficult to climb. It, therefore, pictures the narrow way which the Christian must follow—the difficulties through which he passes as a joint-sacrificer with his Redeemer—and which leads to glory.

The grand gallery, then, represents the dis-

pensation of grace or favor to a certain class: but before they can start up that grand gallery they must receive justification, or that which corresponds to human perfection, by the exercise of faith in the merit of Christ's sacrifice. and are then made acceptable as a part of His sacrifice. In other words, by faith these receive at the beginning of the grand gallery what the world will receive at the end of the Messianic reign, with this difference: that the world will be actually restored to perfection of mind and organism, while the members who constitute the church are counted as perfect human beings through the imputation of the merit of Christ in order that they might be received as a part of the sacrifice.

The grand gallery ending pictures that the Gospel age will come to an end at some time; that the privilege of walking in the narrow way of self-sacrifice, in Jesus' footsteps, will cease.

We here mention a point that may be of interest. Since the erection of the Great Pyramid the grand gallery has been difficult to ascend; but early in July, 1919, there was begun the construction of a stairway or steps leading from the lower to the upper end of this passage, with an iron handrail on either side. This was completed in October, 1919; and since that time the difficulty of walking up this narrow way has ceased.

From the grand gallery one passes into the ante-chamber, and from that into the King's chamber, which pictures the passing of the members of the church into the condition of glory, honor and immortality, with the Lord Jesus, by participation in the first resurrection and being made members of the royal priest-hood on the divine plane with the Master. This is described by the Revelator thus: "Blessed and holy is he that hath part in the first resurrection: on such the second death hath no power, but they shall be priests of God and of Christ, and shall reign with him a thousand years".—Revelation 20:6.

Scientific measurements and calculations demonstrate that the measurement of the Pyramid at its base on the four sides at the level of the cornerstones gives as many pyramid inches as there are days in four years, to the fraction including the leap-year fraction. The diagonal measurements across the base (from northeast

to southwest, and southeast to northwest) give as many inches as there are years in the precessional cycle of the stars. Astronomers have concluded this cycle to be one of 25,827 years; and the Great Pyramid corroborates this conclusion. The distance from the earth to the sun is indicated by the Pyramid as being 91,840,270 miles, which exactly corresponds with astronomical calculations. The Pyramid also has its own way of indicating a standard of weights and measures, based upon the size and weight of the earth. It has many other scientific features of great interest, to which, however, we cannot here give space for full discussion; nor can we discuss at any length the symbolic meaning of its various passages, chambers, etc., in the light of revealed prophecy. We refer the reader to Volume 3 of Studies in the Scrip-TURES by Pastor Russell, and to the works of Prof. C. Piazzi Smyth.

Satan's Counterfeit

There has been much discussion among scholars as to the reason for the building of the pyramids. A short distance south and east of the Great Pyramid stands another pyramid, and still others further south. A few miles up the Nile is a number of smaller pyramids. The Sphinx stands to the southeast of the Great Pyramid, and between the Nile and the larger pyramid nearest the Great Pyramid. Near the Sphinx at one time stood a great temple; and extending from that temple to the pyramid standing nearest to the Pyramid of Gizeh was a subterranean passage. The evidence seems conclusive that this temple, the Sphinx, and the pyramid connected with them by the underground passage, as well as all the other pyramids thereabouts, with the exception of the Great Pyramid, were built under the direction of Satan for the specific purpose of diverting the minds of the people from the lessons taught by the "witness unto the Lord", and to blind them as to God's purposes.

In order to distinguish the Great Pyramid of Gizeh from the one nearest to it, that which was connected with the ancient temple, we designate the latter as Pyramid No. 2. An examination of the construction of Pyramid No. 2 was made. From a distance it looks very much like the Great Pyramid of Gizeh. Upon closer inspection, however, it is seen that the stones are not

placed in symmetrical order. The entrance is on the north side, just as in the Great Pyramid, and opens upon a downward passage which leads to a vault in the center of the structure, where were buried at one time the remains of the royalty of Egypt. This tomb was connected by a subterranean passage with the temple above mentioned. There are no other passages in this pyramid (No. 2); and the same is true of the other lesser pyramids. Only the Great Pyramid contains the passages hereinbefore described.

Without doubt Pyramid No. 2 and the other lesser pyramids along the Nile were used as tombs for the burial of the royal dead of Egypt. With this indisputable evidence before them, the majority of explorers of the pyramids have reached the conclusion that they were all built by the ancient Egyptians for use as tombs. The proof, however, shows that no one was ever buried in the Great Pyramid of Gizeh. Why, then, should Pyramid No. 2 and the other smaller pyramids have been built in the vicinity of the Great Pyramid? The answer seems to be clear, that Satan, who has at all times opposed the development of the divine plan relative to man, produced those counterfeits for the purpose of blinding mankind to the divine arrangement; and with the building of these pyramids and their use as tombs, in connection with the temple for Satanic worship, he has seemingly accomplished his design of blinding the minds of men to the true interpretation of God's plan as pictured by His stone witness, the Great Pyramid of Gizeh.

The four divine attributes—wisdom, power, justice and love, as shown by the prophet Ezekiel—are pictured, respectively, by the eagle, the ox, the lion and man. Satan has attempted to counterfeit these divine attributes. Examination of the Sphinx reveals that its body represents that of a crouching lion, while the head and face are those of a man, with wings on the sides like unto those of an eagle. It was seemingly impossible here to show the four attributes, and Satan showed his "trinity" counterfeit.

The ancient Babylonians, as well as the Egyptians, who worshipped devils, made like figures. In the British Museum, London, are exhibited great stone figures, with the head of a man, the body of a lion, and with wings like

an eagle's; and in some instances the feet are shown to be those of an ox; thus indicating again Satan's attempt to divert the minds of the people from the Lord by his various counterfeits.

Nearly all visitors in Cairo are directed to the museum. We visited it also. Among its exhibits are a great many things of Satanic origin. Much has been said and written about the preservation of dead bodies, called mummies. In this museum may be seen the preserved bodies of men and women, who, it is claimed, were of the old royal line of Egypt—Rameses II and III, for instance; and others. These mummies were taken from the tombs which are found in the numerous pyramids along the Nile.

Here again appears an attempt on the part of Satan to dispute God's purpose concerning sinful man. It was the decree of Jehovah, upon entering His judgment against disobedient Adam, that "dust thou art and unto dust shalt thou return". The preservation of the bodies of these Egyptian rulers who represented Satan was, without doubt, an attempt on the adversary's part to dispute the decree of Jehovah.

By these silent mummies Satan has said: "I will prove that the decree of Jehovah is not true; these shall not return to the dust. Their bodies I preserve and exhibit as visible evidences that the decree of Jehovah is not true." And thus he has deceived many. There would seem to be no other reasonable purpose in preserving these human bodies.

The museum in Cairo also contains a large number of statues of rulers of ancient Egypt; and upon the face of each of these figures is an expression of apparent superiority over others and of disdain for others—this doubtless one of Satan's designs to establish the "divine right of kings" to rule over the peoples of earth. Truly Satan, the god of this world, has blinded the minds of men, "lest the light of the glorious gospel of Christ, who is the image of God, should shine unto them". But thanks be to God, the day is at hand! The light of Messiah's kingdom is beginning to shine; and soon this fraud and deception will be exposed, the darkness dispelled and the light of truth beam forth upon the faces of men everywhere, until even darkest Egypt shall become a land of light, truth and rejoicing.

Advanced Studies in the Divine Plan of the Ages

(May be read connectedly, omitting the questions



The popularity of the Juvenile Bible Studies, among our numerous subscribers, has led us to believe Advanced Studies for the adults would also be appreciated.— Editors



129. How does the Apostle Paul in Galatians 3 and 4 open up this entire mystery?

In his letter to the Galatians, Paul opens up the entire mystery, and shows how the Abrahamic Covenant is to be fulfilled. He shows that the law given to Israel did not interfere with the original Covenant (Galatians 3:15-18), and that the seed of Abraham which is to bless all nations is Christ. (Verse 16) Then, carrying out the idea already alluded to, that the Christ includes all anointed of the spirit, he says, "For as many of you as have been baptised into Christ have put on Christ; . . . and if ye be Christ's then are YE [together with Jesus] Abraham's seed, and heirs, according to the promise" made to Abraham. (Verses 27, 29) Following up the same line of reasoning, he shows (Galatians 4) that Abraham was a type of Jehovah, Sarah a type of the covenant or promise, and Isaac a

type of Christ (Head and body); and then adds, "We, brethren, as Isaac was, are the children of promise". (Verse 28) Thus the plan of God was hidden in types until the gospel age began the development of the Christ.

THE NECESSITY FOR KEEPING THE MYSTERY HIDDEN 130. What was evidently the necessity for keeping this mystery so long hidden?

There has existed a necessity for keeping this mystery hidden, else it would not have been so kept. It was necessary, because to have revealed the plan in full to mankind would have been to frustrate it. Had men known, they would not have crucified either the Lord of glory or the church which is His bedy. (1 Corinthians 2:8) Not only would the death of Christ, as the price of man's redemption, have been interfered with, had not the plan been kept a mystery from the world, but the trial of the faith of the church.

as sharer in the sufferings of Christ, would thereby have been prevented also; for "the world knoweth us not [as His joint-heirs] because [for the same reason that] it knew Him not".—1 John 3:1.

131. Why is the peculiar course in which the "little flock" has been called to walk a mystery to the world?

Not only is the plan of God and the Christ which is the very embodiment of that plan, a great mystery to the world, but the peculiar course in which this little flock is called to walk marks its members as "peculiar people". It was a mystery to the world that a person of so much ability as Jesus of Nazareth should spend his time and talent as he did, whereas, if he had turned his attention to politics, law, merchandise or popular religion, he might have become great and respected. In the opinion of men he foolishly wasted his life, and they said, "He hath a devil and is mad". His life and teachings were mysteries to them. They could not understand him.

The apostles and their companions were likewise mysteries in the world, in leaving their business prospects, etc., to preach forgiveness of sins through the death of the despised and crucified Jesus. Paul forsook a high station and social influence to labor with his hands, and to preach Christ, and the invisible crown for all believers who should walk in His footsteps. This was so mysterious that some said, "Paul, thou art beside thyself; much learning doth make thee mad". And all who so follow in the Master's footsteps are, like Paul, counted fools for Christ's sake.

132. Will the divine purposes always remain shrouded in mystery?

But God's plan will not always be shrouded in mystery; the dawn of the Millennial day brings the fuller light of God to men, and "the knowledge of the Lord shall fill the whole earth". The Sun of Righteousness, which shall rise with healing in His wings, dispelling the darkness of ignorance, is the Christ in Millennial glorynot the Head alone, but also the members of His body; for it is written, "If we suffer with him, we shall also be glorified together"; "When Christ, who is our life, shall appear, then shall we also appear with him in glory"; and "Then shall the righteous shine forth as the sun in the kingdom of their Father". — Romans 8:17; 2 Timothy 2:11, 12; Colossians 3:4; Matthew 13:43.

133. How will the world of mankind during the Millennial age be brought to an understanding of the promises of God, which are now appreciated only by the Lord's "servants and handmaids"?

Now, to all except those begotten to a new mind, by receiving "the mind of Christ", the promises which we believe, and the hopes which we cherish, seem visionary, and too improbable to be received or acted upon. In the age to come, when God shall "pour out his spirit upon all flesh", as during the present age He pours it upon His "servants and handmaids", then indeed all will understand and appreciate the promises now being grasped by the "little flock"; and they will rejoice in the obedience and exaltation of the church.—Revelation 19:7.

They will rejoice in the glorification of the church, through which blessings will then be flowing to them; and while they will realize that the "exceeding great and precious promises" inherited by the Anointed (Head and body) are not for them, but are fulfilled upon us, they will be blessed by the lesson in the church; and while they run for the blessings then held out to them, they will profit by the example of the church, and glorify God on her behalf. But this knowledge will not bring covetousness; for under the new order of things their calling to perfect human nature will fully satisfy them, and will seem more desirable than a change of nature.

Then the "mystery" will have ended; for the world will have come to see that it was the spirit of God in Christ, and the spirit of Christ in us—God manifest in the flesh—which they had hitherto misunderstood. Then they will see that we were not mad, nor fools; but that we chose the better part when we ran for the riches, honors and crown, unseen by them, but eternal.

134. What are the two senses in which the "mystery of God" is used, and when will it be "finished"?

In point of time, the mystery of God will be finished during the period of the sounding of the seventh [symbolic] trumpet. (Revelation 10:7) This applies to the mystery in both senses in which it is used; the mystery or secret features of God's plan will then be made known, and will be clearly seen; and also the "mystery of God", the church, the embodiment of that plan. Both will then be finished. The secret, hidden plan will have sought out the full, complete number of the members of the body of Christ, and hence it, the body of Christ, will be finished.

UVENILE BIBLE STUDY

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

1. If Christ had not been raised from the dead would even dead Christians be raised to life? Answer: No; they would be "perished"—that is, ut-

terly dead forever. See 1 Corinthians 15:17, 18.

2. Did God raise Jesus from the dead?

Answer: Yes. Tee Acts 4:10; 13:30, 34; Rom. 4:24.

3. Was Christ really dead?

Answer: See Revelation 1:18.

4. What is meant in Isaiah 53:12 when it says: "He hath poured out his soul unto death"?

Answer: Jesus gave up His being as a man, and became actually dead until "God raised him from the dead" to a higher plane of life, even the divine plane. See Acts 4:10; Philippians 2:9-11.

5. Why did Jesus "pour out his soul [being] unto death"?

Answer: Because He "made his soul [being] an offering for sin"—the sin of Adam—so that He might call from death. See Isa. 53:10; John 5:28, 29; Hos. 13:14.

6. Did Jesus call the death of Lazarus a sleep?

Answer: Yes. See John 11:11-14.

7. Did Jesus call Lazarus down from heaven? Answer: No. Jesus called him "forth" from the tomb. See John 11:43,44.

8. Does the Bible say that Lazarus had been in heaven, or does it say that he was dead?

Answer: "He that was dead came forth."

9. Is death a friend or an enemy?

Answer: See Jeremiah 31:15-17.

10. Will Jesus during His thousand-year reign on the earth destroy this enemy death? Answer: Yes. See 1 Corinthians 15:25, 26.

11. In Jeremiah 31: 15-17 what is the prophet foretelling?

Answer: See Matthew 2:16-18.

12. Why does the record (Jeremiah 31:15. last part) say that these dead children "were. not"?

Auswer: Because they were actually dead.

13. What does it mean when it says: "They shall come forth from the land of the enemy"?

Answer: It means that Jesus will call them all forth from the grave, from death.

14. Did St. Paul hope that both the just and the unjust would come back from death and be resurrected?

Answer: See Acts 24:15.

COWS, SHEEP and KIDS

When cows fall ill, the government proceeds to take alarm

And sends a veterinarian to sanitate the

farm ;

The cow herself is put to bed and plied with drugs and pills, And Uncle Sam comes forward, when she's cured, to pay the bills.

But when a baby falls in need of medicine and care,

The government contends that this is none of its affair.

When pigs and lambs are threatened with a deadly pestilence Their tender lives are guarded at the gov-

ernment's expense.

They're coddled, nursed and dieted until they're well and fat, And never reckon of the cost-for Uncle

Sam pays that. But when an epidemic marks the babies for

its own. government. untroubled, lets them fight it out alone.

Some day, perhaps, when all the pork has lavishly been passed,

When every scrap of patronage is handed out at last,

hen all our noble congressmen have got all they desire,

and have attained whatever which they may aspire whatever heights to To unknown heights of common sense the government will leap,

and do as much for mothers as it does for cows and sheep.

The Indiana Farmer's Guide

EARTH'S ONLY HOPE

In senate hall and finance mart, Man strives 'gainst man in subtle art; All o'er the world this spirit find. Instead of striving to be kind.

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-The Finlaus

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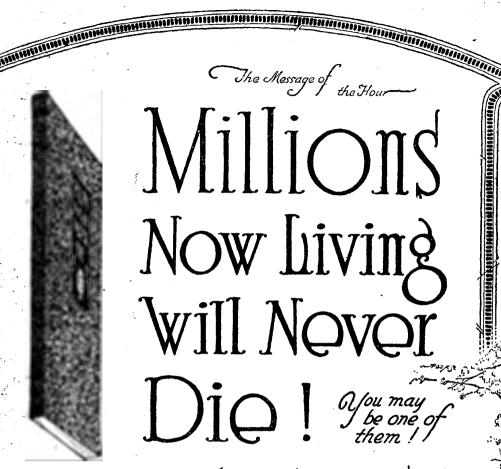
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When that time comes, all the above blessings will not come instantaneously, but will come speedily on those who live through the next five or six years of trouble. Suppose nine of every ten people now living on earth should die of famine, pestilence, customary disease, and violence during the next five years (surely a much too extreme estimate), there would still be living 160,000,000 people to be the first human beneficiaries of the promise of Jesus. "Whosoever liveth and believeth on me, shall neve; die". — John 11:26.

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