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The Golden Age

OLD
WORLD
DYING

a Journal of fact
hope and courage

Vol. V Bi-Weekly No. 117

March 12, 1924



PROGRESS
IN RADIO
A TILT
BETWEEN
PHILOSOPHERS
REPLY
TO INGERSOLL

LIFE
TRUTH
RIGHTEOUSNESS

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NEW
WORLD
BEGINNING

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The Golden Age

Volume V

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Number 117

A New Radio Station

THE International Bible Students Association (I. B. S. A.), with main office at 124 Columbia Heights, Brooklyn, New York, for some time has had in course of construction a radio broadcasting station. It is installing two sets of broadcasting equipment, the smaller radiating 500 watts, and now licensed as Class A equipment to operate on 244-meter wave length, using the call letters WBBR. The larger set is expected to be ready for operation in the near future. It is believed from experiments that there will be less interference on this wave length than a higher one. The apparatus has been tested for several nights; and reports indicate that listeners have heard very distinctly.

The masts for the antenna are constructed of wood, which will eliminate much difficulty that would result from a steel tower's absorbing of electricity. The masts of this station are 200 feet high, and set 300 feet apart. Mr. Ralph H. Leffler, radio engineer, will be in charge of the station. Mr. L. T. Cohen will be manager of broadcasting.

The purpose of this station is entirely educational. It will broadcast scientific news, news of inventions, matters of political interest, musical programs, both instrumental and vocal, readings on diet, health, hygiene, etc., general reports of world news, Bible instruction, Bible questions and answers, and featuring especially Bible lectures by Judge Rutherford, the President of the Association, and a number of his associates, who for some time have been lecturers of the International Bible Students Association.

It is expected that the station will open officially Sunday evening, February 24. The program will be put on between 8:30 and 10:30 p. m.; and thereafter the broadcasting will be each evening between those hours and on Sunday afternoon between 3 and 5 p. m. The opening program will consist of vocal solos by Miss Dorothy Cooke, by Professor John T. Read of Chicago and by Mrs. Cora C. Wellman of Boston, selections by the I. B. S. A. male quartet, duet by Messrs. Franz and Twaroschke, baritone solo by Mr. W. P. Mockridge, instrumental music, piano selections by Professor Jackson, and a lecture by Judge Rutherford. This will be followed by a series of lectures by Judge Rutherford. The **GOLDEN AGE** magazine once each week will give a review of world news.

This station will be devoted entirely to educational instruction for the benefit of the public on matters of importance along the line above mentioned; and the Association will invite any educational institution that desires to broadcast matters of importance for the people to use its station from time to time. Those having receiving sets, and desiring to listen in, will please take note that the wave length is 244 meters.

Information can be had by addressing Mr. A. R. Goux, Secretary, 124 Columbia Heights, Brooklyn, N. Y.

All of our readers are respectfully requested after listening in to address a card or letter to Radio Broadcasting Station WBBR, 124 Columbia Heights, Brooklyn, N. Y., reporting on the efficiency of this station and on how they receive the message.

Radio Receiving Sets

THE International Bible Students Association, of the Watch Tower Bible & Tract Society, do not furnish radio receiving sets, as neither is engaged in commercial business. We refer our readers to those who are manufacturing these sets that you may correspond with

them directly. We give below the names of two firms who are doing this work:

BEDWIN & COSBY, 8118 95th Ave., Woodhaven, L. I., N. Y.

C. R. WEEBER, 518 N. 12th St., Reading, Pa.

Progress in Radio

IN THE year 1866 Mahlon Lewis, a Washington dentist, sent up kites from two mountain peaks in Virginia twenty miles apart, and sent messages from aërials on the kites. During the next four years he had a little financial assistance from friends; but Congress laughed at the proposal to give him \$50,000 with which to develop his invention. He died in 1886, unrewarded and unknown except by a few, but confident that his discovery would one day be of great value to the race.

The father of wireless, Signor Guglielmo Marconi, is even now less than fifty years of age. In 1896, on his father's farm in Italy, he sent his first signal for 100 yards. In July, 1898, he signalled twenty miles. In 1901 his signals crossed the Atlantic.

The first broadcasting of music occurred in the spring of 1909, from the top of the Metropolitan Opera House, at which time the great tenor Caruso sang a portion of the opera "Cavalleria Rusticana." This was heard by several ships in the harbor. From 1910 to 1916 the only broadcasting done in the United States was done in California.

The Bell system transmitted speech by wireless from Arlington, Va., to Paris and to Honolulu in the autumn of 1915; but the Bell people have had so much to do to care for their great and growing wire systems, and have such confidence in them, and such a good knowledge of the difficulties of wireless work, that they have not pushed into the wireless field.

Broadcasting in a commercial way was begun by the Westinghouse Company at Newark, N. J., in the fall of 1920. In THE GOLDEN AGE No. 69, May 10, 1922, the leading article is a comprehensive review of the progress made in radio up to that time. The progress since then has been so rapid that we are constrained to present another summary.

It is believed that at this time there are in the United States from 3,000,000 to 5,000,000 homes which are equipped to receive radio messages; it is believed that there are at least 100,000 such homes in New York city alone. Antennæ cover the roofs. In other instances the antennæ consist of insulated wires dropped out of windows, or are arranged within the apartments in a great variety of ways.

Many of the new apartments which are being built in New York are being fitted with radio

outfits, and a radio operator is in charge in each building. This operator does all the tuning in for the entire house. All the residents have to do is to press a button to turn the music on or to shut it off. These apartments are sold or rented before completed.

In the suburbs it is now difficult to sell property if there is anything around that tends to interfere with the radio connections. A gas tank in the vicinity is very disturbing to a radio set. In full many an American home, perhaps several times in a week, the neighbors come in, the rugs are rolled up, and the guests dance to music originating hundreds of miles away.

Broadcasting Items

AS LATE as a year ago there were 607 licensed broadcasting stations in the United States, of which forty-four are west of the Rocky Mountains. One of these, the WJZ broadcasting station at Newark, N. J., operated jointly by the Radio Corporation of America and the Westinghouse Company, is the pioneer. From the time it was first opened, at an installation expense of \$50,000, it has been giving free nightly concerts, from 7:00 p. m. to midnight, at an annual expense of \$50,000, receiving its compensation in profits on sales of radio apparatus.

With the pouring forth of 607 broadcasting stations into the one medium, the ether, which must be used by all, to say nothing of the 21,000 other sending-stations in the country, the Government was forced in May, 1923, to make allotments of wave lengths to many of the large stations which have heretofore operated on 360 or 400 meter wave lengths. The allotments thus given were respectively 244, 263, 273, 278, 380, 405, 411, 429, 435, 447, 455, 476, 484, 492, and 546 meter wave lengths for certain of these large stations.

There has been a general complaint of the use of the radio for broadcasting baseball scores, cheap humor, and phonograph records. A grocer, in Des Moines has been using it for talking to his customers by radiophone, giving them prices on staple goods and advertising special sales. Such usages for radio will probably be interdicted soon, in the general interests of the public.

Many interesting problems have arisen. Some owners of copyrighted songs have protested

against their being broadcasted—a very foolish protest, we think. It seems to us that the broadcasters were right in their answer that by broadcasting the songs they were giving them an advertisement not otherwise possible to be obtained, and thus creating a demand for them.

The possibility that a single broadcasting program may be duplicated at the same time over all the country was shown in June, 1923, when songs and addresses in Carnegie Hall, New York city, were broadcasted at the same moment from stations in New York city, Schenectady, Pittsburgh, and Chicago, all of these stations being connected by direct telephone wires with the stage. The address which President Harding was to have given at San Francisco, but which was prevented by his death, was to have been thus broadcasted at the same instant in all parts of the United States.

Of the 885 Government broadcasting stations the important ones include Arlington, Va., Washington, D. C., Great Lakes, Ill., Omaha, Neb., North Platte, Neb., Rock Springs, Wyo., Elko, Nev., Reno, Nev., and New Orleans, La. These send out time signals, weather forecasts, market reports, and general news.

Newspapers, stores and other commercial concerns maintain important stations at Boston, Medford Hillside, South Dartmouth, Springfield, Bellows Falls, Providence, Montreal, New York city, Troy, Rochester, Lockport, Buffalo, Newark, Philadelphia, Pittsburgh, Cleveland, Cincinnati, Charlotte, Atlanta, Louisville, Indianapolis, Detroit, Dearborn, Madison, Minneapolis, Davenport, Iowa City, Ames, Des Moines, St. Louis, Jefferson City, Kansas City, Dallas, Fort Worth, Los Angeles, Portland, and hundreds of other places.

In the countries bordering on the Pacific Ocean are 168 broadcasting stations, adjacent to or directly on its shores, twenty-one of which are able to send messages across the Pacific. In some places mountain tops are used as broadcasting locations. The Brazilians have a powerful station fitted up on a mountain overlooking Rio Janeiro. The Germans have stretched their antennae between the tops of two mountains in the Bavarian Alps. These mountain peaks are 6,000 feet high, with almost perpendicular sides where they face each other. The power will be obtained from the river beneath.

British Radio Items

IN BRITAIN the British Broadcasting Company has a monopoly of broadcasting, and every person having a receiving set is supposed to be taxed for the maintenance of the broadcasting program. There are features about this plan that are desirable. The ether is kept freer from a bedlam of conflicting waves.

But reports indicate much difficulty in carrying out the plans. In April, 1923, there had been 122,946 licenses issued; but it was estimated that fully 200,000 persons had sets of their own design or assembly, and could listen in if they desired. It is claimed that licenses cannot be obtained for these pirate sets; also that the government broadcasting news service contains too many society items and too little real news.

Southport, England, has a wireless theatre, where the audience may listen in on concerts, the news of the day, and other features which are being broadcasted. A London organ-grinder gives a similar service in the open; the receiving equipment has a loud speaker attachment, making it possible to hear everything received when the device is standing 200 yards away.

Six great radio stations reach all parts of the British Empire; one each in England, Canada, Jamaica, West Africa, India, and Australia.

When wireless instruments were first installed in Darkest Africa they brought terror to the natives, who supposed that the new instruments, fitted as they were with searchlights, were a new kind of witchcraft by which the all-wise white men could see and hear everything that went on in the huts of the natives. They were calmed and made patriotic when they were assured that the English used these magic powers only to learn about their enemies.

Radio Elsewhere Abroad

FRANCE, Germany, Scandinavia, Holland, and Italy are all engaged in broadcasting. The French Government requires a license fee from each receiving set, demands that all intercepted messages be kept secret, and that operation of the set shall cease whenever the Government so orders.

Holland has a station at Kootwyk, which is one of the most powerful sending and receiving stations in the world. It covers 750 acres, has five masts 700 feet high, and was designed to send and receive messages from Java, 7,500

miles away. It operates after sundown on a wave length of 8,400 meters or about five miles.

There is direct radio communication both ways between the United States and Great Britain, Germany, France, Norway, Hawaii, Poland, Holland, Italy, Sweden, Argentine, and Brazil. To reach Japan it is usually necessary to have the message relayed. The United States maintains six radio stations in Alaska; and there are important stations in the capitals of Mexico, Honduras, Nicaragua, Colombia, and also in the Canal Zone.

The most powerful station in the world is at Monte Gradem, near Buenos Ayres, Argentine. It is of German design and manufacture. The installation covers 1,400 acres. Each of the ten towers is 800 feet high. The combined length of the antennæ is seven and one-half miles. The plant has a 10,000-mile radius, with a wave length of 23,000 meters, or about fifteen miles.

Trans-Oceanic Efficiency

IN THE course of an address before the New York Electrical Society, Mr. David Sarnoff, Vice President of the Radio Corporation of America, in order to demonstrate the efficiency of radio service, sent from the speaker's platform four messages to Europe asking the question, "How is the weather?" In forty-five seconds England reported rainy; in fifty-five seconds Norway reported mild, overcast; in one minute and fifteen seconds France reported lovely; and in two minutes and forty seconds Germany reported gloomy and cold.

In regular practice messages filed in New York at a stated time are delivered in Europe within about two minutes, and vice versa. The American troops at Coblenz on the Rhine were summoned by radio, and in twelve minutes the reply came from the commander that they were on their way.

Within two years' time the Radio Corporation of America, from its six transmitting stations at Marion, Mass., Rocky Point, L. I., New Brunswick, N. J., and Tuckerton, N. J., was handling twenty-five to thirty percent of the entire volume of telegraphic messages between America and Europe. Week-end radio letter service to Europe is only six cents a word.

The effort to get as much as possible out of the expensive radio installations has resulted in an improved telegraphic alphabet, the invention of General George O. Squier, chief signal officer

of the army. The new invention follows the fundamental principles of speech and music. It is claimed that this new alphabet can be sent 2.65 times faster than the Morse code, invented eighty years ago.

It has been found possible to send 100 words per minute and to operate duplex, which means sending and receiving at the same time. It is expected that the time will come when the radio apparatus will be able to send and receive at the rate of a thousand words per minute.

The method by which messages are sent by radio is as follows: They are first written on a machine that looks like an ordinary typewriter. This punctures a tape, and the tape controls the radio sending apparatus much as a punctured reel controls a player piano. The same device has been used in sending radio messages from airplanes. These messages are sent at such high speeds that eavesdropping is well nigh impossible; they can be received only on high-speed receiving apparatus.

Radio Ship Service

FROM the San Francisco wireless office steamers toward China and Australia have been held for a distance of nearly 6,000 miles, communicating direct regularly each night. Imagine the satisfaction to the passengers of being able to communicate at any time with their loved ones thousands of miles away across the trackless deep!

The ships have great satisfaction in communicating with each other. Instances are on record where concerts have been sent by wireless from one ship to another, 125 miles apart at sea; also of a radio chess game between contending teams on the steamers Western World and American Legion, until the steamers, one going north and the other south, were twelve hundred miles apart.

More than a year ago the president of the American Telephone and Telegraph Company, from his home in Connecticut, conversed with the captain of the steamer America, 370 miles out from New York. The sending was done from Deal Beach, N. J.; the receiving was done at Elberon, N. J. The switchboard was in the Walker-Lispensard Building in New York city. The sending was done over a wave length of 420 meters, and the receiving was over a wave length of 380 meters.

There are now stations in New Jersey where

a different two-way conversation can be maintained with each of three ships at sea at the same time; telephones are being put into the staterooms of steamers in both Atlantic and Pacific Oceans; and shortly it will be possible for any one in the United States to pick up his telephone anywhere in the country and converse with any passenger on any liner between America and Europe or America and the Orient as easily as if speaking to a person in the same room.

Messages can also be sent to and from submarines when submerged and between two submerged submarines.

A Striking Example

RADIO received a great impetus when the Republic was rammed by the Florida off the coast of Nantucket in 1910 and went down, but not until the wireless operator had sent out the S. O. S. signals which made Jack Binns a hero in every American home. Binns is still a young man. Indeed, that is one of the most interesting things about radio; it seems to be almost wholly in the hands of young men.

Another wonderful illustration of the value of wireless was demonstrated at the time the steamer City of Honolulu was burned and abandoned 700 miles off the California coast on Thursday, October 12, 1922. As soon as the ship was found to be in flames, the operator on board broadcasted the ship's position. Within five minutes acknowledgment of the message was received from one station on shore and three steamers.

After the lapse of two hours the ship's condition was recognized as hopeless, and the S. O. S. call was sent out. This was also immediately acknowledged by one land station and by one ship coming ahead full speed to the rescue. Thirty minutes later the information was broadcasted that all were off the boat except the captain, chief engineer, first officer, fourth officer, and first radio operator. Forty minutes later a final message was received from shore, an answer was sent with difficulty, and the ship was abandoned. All of the 263 persons on board were saved and landed at Los Angeles four days later.

There are some other interesting items regarding this disaster. The news story of the rescue of the passengers of the doomed ship was wirelessly from the rescue ship within 300

yards of where the City of Honolulu was being burned. On the day previous, as soon as the vessel was known to be doomed, the Associated Press obtained from Honolulu in forty-four minutes the complete passenger list of the ship ready for publication in San Francisco.

As already intimated, radio service to and from airplanes is as effective as to or from a ship. By means of the teletype, messages can be sent or received in typewritten form. The striking of the letter A on the teletype in the air causes the letter A to be printed on the teletype on the ground, and vice versa. This does away with the necessity of sending messages in code and eliminates chances of error.

The commercial passenger airplanes between Geneva and Paris are equipped with wireless, so that the passengers may be entertained while enroute.

An illustration of the value of radio in air service occurred a year ago on a mail flight between Cleveland and Chicago. On account of head winds and squalls the aviator found that he would not be able to land before dark. He sent out distress calls, asking that the landing-place be illuminated with flares and search-lights. Six stations heard the call, the lights were provided, and the crew and mail were landed in safety, whereas death would have been the almost certain result otherwise.

Trans-Oceanic Telephony

FOR several years the Bell system has been maintaining a wireless telephone service between Catalina Island and Los Angeles, by which any subscriber in Catalina can at any time call any subscriber in Los Angeles. This line has been maintained by wireless largely because it provided an ideal place to test out wireless service. From Catalina, in 1921, speech was transmitted to the S. S. Gloucester in the Atlantic ocean. In order to accomplish this feat use was made of land wire systems on Catalina and across the mainland of the continent, and wireless across portions of the Pacific and the Atlantic, making four sections in all.

In January, 1923, wireless telephone conversation was carried on from New York to Southgate Station, London. The conversation could be carried in but one direction, owing to the development of British radio enterprise as a government monopoly; but the British heard

perfectly, remarking that the only difficulty was the American accent.

Wireless telephony between America and Europe is possible right now, but it would require such high electric power as to make it very expensive. The American Telephone and Telegraph Company state that they hope to produce apparatus which will enable conversations both ways throughout the twenty-four hours, and which will reach around the world.

It is freely predicted that within two years business men in New York or Chicago can converse freely with business men in London or Paris, using wires part of the way and wireless across the ocean. Nikola Tesla, the electrical wizard, adds to this his expectation that with television apparatus each will be able to see the other as the conversation is carried on. Subsequent paragraphs show how this extraordinary thing may come true.

Freak Transmission Items

WIRELESS transmission is freaky, as yet. It has bad freaks, but it has good ones also; and under certain conditions of weather extraordinary results are obtained, of which we list a number of illustrations that have come to our attention.

A dance was held at Santa Clara, Cuba, to music sent out from Schenectady, N. Y., 1,450 miles distant. Reversing the order, a fifteen-year-old boy in Medford, Oregon, picked up an address that was being broadcasted from Havana. An amateur message sent from Hartford, Connecticut, received an answer from Hawaii in four minutes' time. Radio concerts in Philadelphia have been heard in Paris so clearly that the conversations of the operators in Philadelphia were overheard. Wireless stations in Germany picked up the voice of a young woman singing in a department store in Newark, N. J. Both the vocal and the instrumental tones were perfectly audible.

The broadcasting station of the General Electric Company, at Schenectady, N. Y., has received acknowledgments from every state in the Union, from Alberta, Newfoundland, Panama, and from ships two thousand miles at sea.

French, British and American amateurs have repeatedly bridged the Atlantic on 200 meters. As many as 125 American amateurs have been heard in Europe in one week, and in one in-

A ship operator 11,000 miles away in the Indian ocean picked up an amateur wireless station operating at Galveston, Texas.

In January, 1923, the *New York Times* received a complete message from the great Japanese sending station at Tokio, 9,000 miles away. In March, 1923, during four successive days, music broadcasted from the Rensselaer Polytechnic Institute, Troy, N. Y., was heard at Invercargill, New Zealand, slightly less than 10,000 miles away in an air line.

Messages are now sent from London to Australia by radio, twelve thousand miles; but whether they are relayed at India, as we think likely, is not ascertainable from the data in hand. A station working on 8,400 meters at Hillside, Oregon, is being heard regularly at Shanghai. The company operating plans a series of stations in China.

Radio and Land Vehicles

SEVERAL American Pullman trains have been fitted with radio apparatus for the entertainment of passengers enroute. Among these are the Lackawanna; Lehigh Valley; Pennsylvania; Chicago, Milwaukee and St. Paul; Chicago and Alton; and Frisco systems. These radio receiving sets have been applied to only a few of the trains on these roads and not continuously.

The Lehigh Valley found upon trial that they could receive perfectly while passing through tunnels, could receive well while passing any body of water, either still or running, but had difficulty in receiving when passing between an avenue of trees on a level stretch of country.

The Interborough Rapid Transit Company, of New York city, permitted the use of a rear platform of one of their trains for the temporary installation of a receiving apparatus; and it was found that the messages could be received clearly underground, even when the train was rushing through the iron tubes far beneath the waters of the East River. There was found to be considerable interference by induction from passing trains.

In May, 1923, experiments conducted on a New York city trolley car showed that by radio it was quite possible for the car to keep in constant telephonic communication with the power house. It may therefore be expected soon to follow, as a matter of course, that every trolley

car will be fitted with such means of communication, so that in case of trouble instant word can be sent to headquarters. Such an arrangement would obviate the long delays which sometimes occur when a car is confronted with a breakdown or other emergency.

Reports from Washington are that a fleet of army tanks can now be connected by radio in such a way that the master tank can direct the movement of the entire fleet while in action, making any changes in manœuvres which the tide of battle may require.

Transmission of Pictures

THERE are two general methods of transmitting pictures, the first of which is a modification of a method which has been used more or less for a generation. The picture to be photographed is graduated into seventeen shades of light. These gradations, expressed in letters of the Morse code, are automatically transferred from the photograph to the telegraph key. On arrival on the other side of the world, a typewriter is operated, fitted with seventeen kinds of dots, corresponding to a keyboard bearing the letters A to P, with the result that all the essentials of the picture emerge, ready for the finishing touches of the artist. Fingerprints can be sent by this same method.

A more startling and almost unbelievable invention is that of C. Francis Jenkins, of Washington. For more than a year he has been able to send still pictures a distance of 140 miles, and now has perfected the device so as to allow of the sending of motion pictures a like distance. In this case the picture is broken up into thousands of flashes by the revolving of a polished mirror of graduated thickness, and is reproduced by the reverse operation of a similar instrument, called a radio eye. The picture may be sent or received either by wire or by radio.

More wonderful still, if such a thing be possible, is the palliophotophone, by means of which the human voice can be so perfectly photographed that when reproduced from the film upon which it is represented by a waving streak of light, it cannot be distinguished from the original voice of the person making the record. By means of this instrument it is possible by radio to make, at any reasonable distance, a permanent record of audible speech uttered anywhere.

Manipulation of Vehicles

IT IS now two years since the battleship Iowa, with its fires lighted, but without a man on board, was propelled hither and thither by a radio operator on the battleship Ohio five miles away. The guns of the Iowa were not fired, but the naval engineers stated at the time that they could have been fired by the same methods by which the ship was steered.

At Pittsburgh a freight train, with steam up, was started and stopped entirely by radio. The same has been done with an automobile, the latter feat having been performed at an electrical exhibit in New York city. In these feats the radio did not supply the haulage power, but merely the starting and stopping and guiding impulses.

In the latter part of July, 1923, a despatch from France reported an airplane as traveling away from and being guided back to a radio station, steered only by wireless. But the despatch indicated that the plane had an aviator aboard, and the sense in which the radio steering was done is not sufficiently shown to be clear to the reader.

The series of 200 inventions by John Hays Hammond, Jr., have for their object the complete guidance of airplanes, submarines, torpedoes, free balloons, motor cars, land torpedoes, and battleships, all by wireless, without any pilots or operators aboard. The speed can be regulated, the altitude, and the discharge of cargo, all by wireless. These inventions have been sufficiently tested out to insure that in case of a war a wireless operator perhaps hundreds of miles away could destroy an enemy city or army so that not a vestige of life would be left in it, and all without the risk of a single life to the attacking party. How very evident that unless those days should be shortened there should no flesh be saved!

Power Transmission

IT IS a long step from the manipulation of vehicles to furnishing the power that runs them; but engineers are agreed that even that is possible, or at least will be possible some time. The General Electric Company, at Lynn, Massachusetts, has sent power several hundred feet without wires and in sufficient volume to operate massive machinery. Its engineers are said to be agreed that when the right kind of motor is devised it will be found that there is

enough electricity in the air at all times to operate every piece of machinery in the world.

Nikola Tesla is said to believe that in the future it will be possible to cause rain to fall by radio, to drive vehicles of all kinds by its power, and to light houses, no matter how far they are from an electric wire.

During the World War the Government, which has by now issued over a thousand wireless patents and has three thousand more pending, got the big electrical concerns of the country together, so that their patents could be used together in radio work. The Radio Corporation of America thus gained a virtual monopoly of radio work in America, not only because of the patents, but by exclusive traffic agreements, direct governmental grants and provisions conferring exclusive rights to valuable wave band lengths. The inventions of Mr. John Hays Hammond, Jr., some two hundred in number, upon which he has been at work for fourteen years, constituted an important part of this arrangement.

• Discoveries multiply. Methods of transmission have so changed that a single bottle, a vacuum tube, does the work that but a little time ago was done by \$50,000 worth of heavy electrical machinery. This invention, the work of Lee DeForest, consisting of a single tube of glass and copper three feet in length by five inches in diameter, does the work of a high frequency alternator weighing several tons.

Radio signals have been transmitted over an electric wire, without the slightest interference to the lighting circuit, and have been made to turn on and off street lights at a distance of four miles, near Lynn, Mass., merely by the pressing of a button. The invention of B. F. Moeffner makes it possible to use electric light wires as antennæ for a receiving station, and to use the electric light current instead of storage battery for lighting the filaments of the electron tubes. In this operation the current is stepped down from 110 volts to six volts.

Marconi has discovered a method of shooting radio waves out in a given direction, somewhat after the manner of a search-light. He has also discovered a new wave, not previously used for long-distance wireless, which transmits a message 2,500 miles with much less power and energy and much faster and cheaper than has hitherto been possible. Mr. Marconi makes the cheerful prediction that inside of ten years the

very best radio apparatus now in use will be completely obsolete.

In the summer of 1922 there were 202 concerns in America engaged in the manufacture of radio apparatus. It is safe to say that some of their apparatus was obsolete before it left the factory.

Receiving Sets

ROUGHLY speaking, the cost of a receiving set is about \$1 per mile for every mile of distance from the broadcasting station. There are four general types. A simple crystal set, costing \$15 to \$40, can receive from broadcasting stations up to twenty-five miles distance. A single vacuum tube detector and receiver, costing \$50 to \$75, may receive up to one hundred miles. A vacuum tube detector and amplifying receiver, costing \$100 to \$250, will receive well up to a hundred miles, and under favorable conditions up to a thousand miles. The most elaborate instruments for home use combine radio and audio frequency amplification and loop reception, and cost \$300 to \$500.

The department stores alone are selling about a million sets annually. No radio set is fit to purchase unless all the connections have been soldered; otherwise the wires become loose, and reception is impossible. Further, if paste or acid is spread over the wiring, or if there is dirt in the receiving box, there will be trouble.

Many unique ways have been contrived to receive by wireless. In the Western states, in not a few places, a barbed wire fence functions as an aerial; while at Hammond, Oregon, the lumberjacks have their antennæ swinging from the tops of trees three hundred feet in height.

At a convention of electrical men in Chicago Mr. F. W. Dunmore, of the United States Bureau of Standards, walked around the lobby of the hotel, carrying in his hands a small suitcase out of which came a stream of market reports, interspersed with music, much to the mystification of some of the guests.

On the beaches at New York in the summer of 1923 there were boys with wireless sets rigged up in their straw hats. Others have made receiving sets out of bill folders, cigar boxes, reading lamps, dinner pails, pocket-books, safety-razor boxes, and match boxes. A lad in Knoxville, Tennessee, made an instrument slightly less than an inch square which worked perfectly over a distance of fifteen miles.

Brainard Foote fitted a receiving apparatus into an ordinary watch case; and William H. Ruf, Manâsquân, N. J., made a workable receiving set no larger than a thumb-nail. Some of his contrivances were exhibited at the radio show of the National Radio Chamber of Commerce, held at the 71st regiment armory in New York.

Static, Fading, and Other Troubles

THE Winter atmosphere is relatively free from the charges of electricity which set up electromagnetic waves competing with those of the transmitting radio stations. In the Summer the static charges wandering around in the atmosphere become so bothersome, and are so bothersome at all times in the tropics, that the operation of a receiving set is difficult. Also, there are more interfering noises in the Summer than in the Winter. Sunlight has a dampening effect on radio signals, so that the night is the best time for operation.

There are pockets in the atmosphere where signals fade and become entirely unreadable. These are offset by regions where the signals are specially clear. A ship may enter a fading pocket, and be out of touch for as many as twelve hours. It may then emerge from the pocket and, although going away from the sending station, may hear even better than before the pocket was entered. There are such pockets in the Pacific ocean; there is also a pocket between New York and Boston, supposedly caused in the latter case by a large body of low-grade iron ore lying between the two cities.

These and other troubles are receiving constant attention at the hands of experts, and considerable has been accomplished in reducing them. Radio is not to be condemned because of them. It is of greatest possible benefit as a supplement to wire and cable service, doing many things that they cannot do; but it is entirely unlikely that it will ever displace them. If radio had been discovered first, and the use of wires next, the radio people would now be worrying, and have reason to worry, lest the wires, giving direct and secret service from point to point, would eliminate them from the field.

A very efficient radio receiver will now bring in all sorts of hums and buzzes from electric light and power lines, trolley car motors, automobile magnetos, violet ray apparatus, and thunder storms; and all these must be tuned

out. If they are not tuned out, a situation is liable to develop like that humorously described in the Williamsport, Pa., *Grit*:

"This new idea of being married by radio has led to so much confusion that several states have been constrained to declare it illegal. We commend such action; for it is difficult to imagine a more unsatisfactory performance. Just listen in on the next radio marriage you learn of, and you will probably be regaled by a ceremony something like this:

"Minister: Do you, William, wee-zow-bing-whistle-rum-ta-ta-wehe-e—take this maid, Miss Eloise—butter closed firm at 42 with Texas oil—to be your lawfully wedded—fair and warmer tomorrow in northern part—and to keep and cherish her until—the children's stroy this evening will be the fable of the wood-chuck played by the Shoonville Symphony orchestra.

"Answer: I shake a little shimmy on the shores of Kankakee.

"Minister: And do you, Eloise Stritt—castor oil and orange juice in equal parts is one of the best remedies for children's snapsnap-buzz-buzz-bang-whe-e-e—take this bedtime story this evening by Clarence silos should always be open at the top—to be your lawfully wedded—xylophone solo by Sousa's, band in a novel march program.

"Answer: Jazzbo Sam in Alabama.

"Minister: I therefore pronounce you man and Clover College Glee club in a program of cheese quoted at 28 cents a pound in prevent forest fires on your fishing trip by the Swiss yodlers."

Improvements in Secrecy

THERE are forty-nine known channels for radio use between the 200 meter and 1,600 meter wave lengths. Thus, theoretically, it is possible for forty-nine broadcasting stations to operate in the same community at the same time without producing confusion; but in practice! Well! Practice is different. The big ones drown out the little ones.

One of the inventions of John Hays Hammond, Jr., whose inventions have several times been mentioned in this article, has had in view the promotion of secrecy. It enables the scrambling of radio-telephonic messages which can be unscrambled only by the person at the other end with certain special apparatus designed with that end in view. Such messages cannot be understood by others, even though they may hear the sounds. The new scrambling and unscrambling device is in use between Catalina Island and Los Angeles. Wireless telephony between the two points, thirty miles apart, has

been in use for about five years; but there has been no privacy in the messages until now.

Radio sending has been greatly improved by the invention of a perfect microphone, not made of any tangible materials, but of what can be compared to a sheet of electricity. The thinnest and most flexible of metals is not sufficiently sensitive to reflect properly the tones of music, although it does very well for the human voice in speaking.

Radio in Governmental Use

IT IS more than a year since Senator Harry S. New, of Indiana, addressed thousands of his constituents through the powerful station at Arlington. Since then the Government has decided not to let government stations be used for broadcasting appeals for votes, even though the service is paid for.

The Congressional halls have been fitted with microphone apparatus which enables every whisper to be heard; and it would be a very easy matter now for everything that is said in those halls to be broadcasted, if there was any reason for doing so. It would be possible to broadcast similarly the deliberations of diplomats, courts, and conferences. It was planned that the address which President Harding was to have delivered in San Francisco, should be actually heard by about five million persons. If their awakening should occur, the new statesmen, Joseph, Moses, David, Daniel, and others, could even now, by the relay method, literally speed their messages through the air to all the nations of the earth, without visiting them at all. Interesting things in this line are just ahead. These inventions are all part of the Lord's plans for bringing in the kingdom.

Police authorities are now broadcasting descriptions of criminals. News of a crime is flashed in every direction, and the criminal has no way to flee. The eight high-powered bandit cars of the Chicago police force are equipped with both sending and receiving outfits; it is even planned to equip every policeman with a receiving set, thus to keep every patrolman in the city constantly in touch with the crime situation, no matter where he may be.

It is also anticipated that shortly, through a combination of radio apparatus and phonograph, the recording of court proceedings will be conducted mechanically, and the court reporter will be a thing of the past.

Education and the Press

TUFTS COLLEGE and several of the universities, namely, those of Wisconsin, Iowa and Nebraska, are engaged in broadcasting lectures on economics, engineering, athletics, the drama, and other subjects of a popular nature, not beyond the understanding of boys fifteen to twenty-five years of age. It is thus apparent how the farmers' boys can all be given liberal educations without leaving home.

Radio can be the transformation of school life. One skilled lecturer in history or geography or hygiene can now deliver his lecture to the children in a thousand schools. In New York city a number of high schools were recently given a joint examination in accountancy. A single instructor broadcasted the problems, which were answered simultaneously by the pupils at their desks. Courses in radio have been inaugurated in English schools.

The Government is not only broadcasting news of the markets, weather, and general news, but is also giving talks on education twice a week. In Lewiston, Ohio, a radio set installed in the high school is equipped with a magnavox, with the result that farmers and other persons within a radius of a mile and a quarter can hear market reports and news items and listen to music while going about their daily tasks. One can but wonder what is to become of the local purveyors of advertisements and propaganda when the cream of the news has been skimmed off hours before their papers could be printed and distributed. At present the newspapers themselves are receiving seventy percent of their news by wireless. Uninterrupted communication everywhere is evidently to be the order of things in the new age. Under such circumstances fraud and oppression become increasingly difficult.

Radio and Religion

WE HAVE reason to believe that the cause of true religion will be helped by radio, and our reason for thinking so appears in this issue, on page 355. But we foresee that it will be the death of many an institution which calls itself a church but which is merely a commercial institution or a club.

The London *Daily Herald* says of radio: "This will tend to divert attention more and more from matters of which there can be no exact knowledge and to bestow it upon enlarg-

ing our acquaintance with nature." This is another way of saying that with this new and interesting field of human interest opening before them many people will pay less and less attention to religion; and we think that this is true. From this aspect alone the denominational churches would have reason to fear radio.

But they have more reason. The country church has been hit hard both by the automobile, which takes the attendants to the more elaborate buildings and services in the cities or takes them away from service altogether, and by the radio, which takes the place of either. It is true that a few churches have installed receiving sets, so as to get sermons and music from outside, and other churches have broadcasted sermons and tried to secure membership and money by interest thus created; but any one can see that the plan is impractical.

The truth can be broadcasted; but error can be broadcasted, too. A hypnotist in Ridgewood, N. J., by a prearranged plan broadcasted instructions to a young man in New York to fix his mind upon the hypnotist. In a few seconds he became rigid, his eyes wide open and staring. While hypnotized his body was pierced with a needle and otherwise maltreated, as usual. He came to himself when a lighted match was held within a half inch of his eyes, causing them to blink and relax, but with apparent difficulty.

The demons are doing what they can to abuse the use of radio. Edward Berthold, Jr., of Newark, N. J., besides receiving the usual messages by radio which others could hear, was troubled with demons, who shot into his mind messages which none but himself could hear. These messages were not carried by radio, or all would have been able to hear them. He became crazed, and killed himself and two others.

For a long time it was supposed that the planet Mars was trying to get in touch with our earth. Marconi had detected wave lengths of 150,000 meters, and did not know any way by which such wave lengths could be produced on earth. He subsequently laughed heartily when he was shown in the laboratories of the General Electric Company, at Schenectady, the source from which these mysterious waves proceeded.

Radio and Health

IT IS believed by Henry S. Williams, M. D., J. L. D., that the electromagnetic waves constantly passing through the bodies of all human

beings as a result of broadcasting operations, have a beneficial effect upon human life, being the same in character as those employed in the latest treatment for high blood pressure. Radio has been directly employed in the treatment of cases of rheumatism, neuritis, pneumonia, and deafness.

Men that have not heard a sound in thirty years have been able to hear when the radio headpieces were attached. Leo Kuehn, of Detroit, a deaf-mute twenty-eight years of age, an intelligent, educated man, learned to speak after a few lessons by radio. His first uttered words were: "Holy, holy, holy." It was a well-chosen tribute to the Author of his blessings.

A German invention, a radio microphone, makes it possible for a physician in his office to examine the hearts of patients who remain in their homes. New York State is giving lectures on health by radio; medical advice is broadcasted free to anybody broadcasting a request for it. In England a mother was summoned to the bedside of her son by a message sent broadcast.

Surgeons have found that when a patient is to be operated upon by the spinal anaesthesia method, whereby the body is benumbed from the shoulders down, the patient is helped from becoming nervous if allowed to have a radio-phone service attached to his ears.

Radio concerts have been given at the hospital for the insane at Central Islip, at Bellevue Hospital, and at Sing Sing prison, and have been greatly appreciated. Radio has been installed in Beth Israel and St. Luke's Hospitals, with radio service for all patients able and willing to use the same. Heretofore in blind asylums it has been necessary to have readers; now these are unnecessary, the radio having taken their place. A radio has been installed on Cabras Island, Porto Rico's dreary, shadeless leper colony. Here these poor unfortunates may hear the news and the concerts of the world which they have left.

A hotel just completed in Minneapolis has each of its several hundred rooms connected with radio plugs. Any guest for a small fee can rent head phones from the clerk's office, and can thus listen to music until he falls asleep. He cannot steal the phones; for they remain connected until released by an employe.

An enterprising bootblack in Oakland has installed a radio set for the entertainment of his

customers; dentists and barbers have done the same. New York City has permitted their installation in the fire houses. When installed in a postoffice it has been found that the clerks unconsciously speed up their work. There seems no reason why the radio cannot be installed in myriads of factories, to relieve the monotony of certain kinds of toil. It is surely a godsend to the blind, the shut-ins, the snow-bound, and to those who, for other reasons, have no other source of entertainment.

Radio and Safety

RADIO has for some time been used for guiding ships into port during the densest fogs. The steamer Oropsea, two hours off the Ambrose lightship, was given her position during a dense fog so accurately that when she passed the lightship she came within sixty yards of it.

By Marconi's radio reflector apparatus, ships can now sail through the darkest channels and most dangerous fogs by constantly sending out shafts of radio waves and receiving their radio echo. Ships lost in a storm can accurately determine their positions and can locate other ships and lighthouses.

The old laborious method of heaving the lead is now unnecessary. A navigator passing through the water at full speed can tell at all times the depth of the water through which he is passing. The contour of the ocean bottom is being charted anew, and accurately. It is believed that by this means a way may be found to ascertain the depth of Sigsbee's Deep, off the coast of Yucatan, a place never yet fathomed.

In measuring the length of time from the sending forth of the sound waves to the bottom of the ocean, and their return to the surface, the time is measured to less than the thousandth part of a second. By the same method by which the depth of the ocean bed is measured, the location of masses of ice is determined, enabling the ice patrol to notify steamers in the vicinity.

The dangers of underground and undersea work have been greatly reduced by the radio-telephone. By means of this apparatus entombed miners or laborers entrapped in fallen caissons, or men engaged in building tubes under water, or men in disabled submarines, can direct the work of their rescuers.

It is proposed to fit life-saving stations with radio receiving sets and amplifiers, so that word

may be sent out over the waters to canoeists and bathers in case of the sudden approach of storms.

A Remarkable Forecast

HERBERT D. STENSON in the *Boston Post* gives the following remarkable forecast of the future as it will be affected by radio:

"The average man of today, even the unimaginative, will agree with me when I say that the 'age' of our children will be the 'age of radio,' or the age of 'impossibility made possible.'

"And what is the age of radio? What are its possibilities? I claim without reservation that it will be man's supreme age, the last. It will be the Utopia which dreamers and scientists have seen through the curtain of disbelief and ignorance. Radio will tear aside that curtain, and we shall enter and live a life far beyond the wildest dreams of a century ago.

"How? To answer in a practical way, we will compare with the past. All motor vehicles will run noiselessly, deriving their power from radio energy stations situated at our greatest water-power sources. Streets and homes will be lighted by heatless, everburning lamps, drawing their energy from the air. Heat of the greatest intensity will warm not only our dwellings, but our great outdoors as well. Climate will be controlled.

"Telephones and telegraphy will become obsolete. We will talk across the continent on waves of radio. Liners and passenger airplanes will not only be driven by radio, but will be in constant communication with the shores. The news of the world, its dramas and finest musicales will be enjoyed in the most humble of homes.

"And not merely the voice, or sound, but the living, breathing picture will speed on wings of radio, and unfold miles away in all its brilliancy. You will talk by radio to some distant loved one, and constantly before you that face will smile and answer as if you sat side by side.

"Hydrogen, which heretofore has been obtainable only in limited quantities, will be released by radio vibration, and drench the starving lands of our civilized world. Fruit and flowers will run riot.

"Receivers of wonderful delicacy will record every human emotion, love, hate, etc. Crime will become impossible. Divorce and scandals will cease. Disease will wither and die. Plagues will be swept from the earth. How? by radio vibrations streaming across the earth of such infinite strength that they will kill and shatter germ life. The air we breathe will be teeming with health. We all know how clear and invigorating the air is after an electric storm. Radio will cause it always to be so.

"If one increases the health, intelligence, and happiness of a community, he increases civilization and democracy. He causes Christianity to flourish, where sin

and vice ran rampant. Radio activity will do all that and more. Radio will become the sword arm of Christianity, of democracy, of life itself.

"All religions are united in saying that we are in the latter days. Its prophecies are fulfilled. Sorrow, pain

and sin shall be swept from the earth. The wings of radio are, materially speaking, the wings of the Recording Angel. We are on the threshold. The Radio age will be life's fulfilment, earth's supreme result, and the heaven we are all blindly groping for."

Reports From Foreign Correspondents

FROM SPAIN

IN THE GOLDEN AGE for November 7, 1923, is a reference to the recent uprising in Spain; but if any may have drawn from that article the conclusion that the uprising was an act on the part of the common soldiers of Spain, this is to correct any such inference. As a matter of fact, the common soldiers knew nothing of the matter until the new order of things had been established by certain high officers, who had revolted and enthroned themselves over all the people, as did Mussolini in Italy.

The sources of news from Spain are almost entirely under the control of the financiers and the clergy, who coöperate in their efforts to make it seem that things are going well for the people, and that they are satisfied; but this is far from the truth.

As an evidence that the recent uprising in Spain is a purely Mussolini movement, let me draw attention to the fact that when our "Excelentissimo senor Marques de Estella primo de Rivera" first came out of Barcelona to take possession of the government at Madrid, the Bishop of Barcelona blessed him as he departed.

I do not mean to say that Primo de Rivera might not have taken possession of the ship of state with first-class intentions, and with finest desires to do the best he could for the people. But it makes little difference what are the intentions of a good captain when the sea is full of pirates, sea-wolves: and the Spanish capital is full of clergy and church-goers who are just that, who "devour widows' houses, and for a pretence make long prayer."—Matthew 23:14.

Evidently the Lord must have had these in mind when He spoke of some who "are within full of dead men's bones, and of all uncleanness" (Matthew 23:27); for they are still engaged in the work of taking dead men out of an imaginary purgatory into a heaven over which they have no control, and into which they themselves will never enter. They are asleep as to the times

in which we are living, and know not that the thief is entering their house; but thanks be to the Lord, they shall soon see and know and understand.

High-handed Rulership in Spain

OVER a month ago the Speaker of the House of Congress, Senior Melquiades Alvarez (elected by the people), and the Speaker of the Senate, Conde de Romanones (not elected by the people), sent a note to the king, reminding him of his violation of the constitution in not opening Congress, a thing that he promised to do, under oath, with his hands on the Gospels.

But what are the Gospels to a worldly king? So it transpired that on the following day our Spanish Mussolini, Primo de Rivera, had a decree signed by the king which eliminated these gentlemen from the speakerships, and at the same time notified them that Spain needs neither congress nor senate to rule. Therefore no one knows when they will open again.

As for me, I think that these Houses will never again be open. If they never were of any real benefit to the common people, and if we now have an autocratic government which is shortly to be followed by the "Iron Rule" of Christ, which will be still more autocratic, I fail to see where there is more need of "Houses" which are largely given over to foolish talking. These legislators, who have hitherto done so little for the common people, may as well keep quiet.

Things are going from bad to worse for the common people. They can hardly get enough to eat, but they must not protest. If they do protest they get free lodgings, behind bars, and without any notice of when they may go out again. Under these conditions some might think this to be a good time to be a well-fed priest; but there are plenty of indications that the time is near when the priests, too, will be in for their share of gnashing of teeth and will realize that

it would have been much better for them to be cow-keepers.—Zechariah 13:5.

Many seem to think that as the people are in silence they approve of the way things are going; but I get around among them and know that they are nearly at the breaking point, and that the "night wherein no man can work" is already settling down in Spain. Not only is this the case in Spain, but the whole world is with one accord crying out for the need of a wise and strong one to put its affairs in better order, and no man is to be found who can meet the requirements of the case.

Greece is busy putting out old kings and putting in new ones, occasionally changing a king for a plain man like Venizelos; but no common man is enough for the stupendous job of ruling the people with justice in this day of gigantic and world-wide money power. What the Greeks need, and what all nations need, is God. They do not yet know it; but Jehovah will permit them to suffer until they humble themselves sufficiently to acknowledge their need of the Messiah He has, in His great love, provided. When the world becomes hopeless, then Jehovah will say to His Christ, "Go ahead! The world is now in such miserable condition that it is only too glad that all of its affairs should be placed in your hands."

FROM CANADA

TWENTY years ago, an aggressive campaign was started in the older lands of Europe to bring out immigrants to our fair land. Sixteen years ago it reached considerable proportions, and many thousands of Britain's younger sons and daughters made the journey to the Land of Promise.

All was activity and bustle. The real estate dealer, with a zeal and energy which had its source in unbounded optimism, surveyed his building lots and small farm acreages from the depths of the sea to the tops of the highest mountains. On the prairies the homesteader gambled his ten dollars against the Government's one hundred and sixty acres, that he would not starve to death in three years. Sometimes he thought he won.

Upon the promise of new railroad branches and extension lines, he hewed his way into the wilderness, emulated the gopher (always his nearest neighbor), and built himself a shack,

usually called a "dugout" because it was constructed half underground and half above, of sod and earth. He fought his fight against sickness, starvation, and loneliness; and if his health was good and his mentality stood the test, he finally triumphed to the extent of becoming the proud possessor of his little "quarter section"; or thought he did.

One style of architecture, however, that has flourished on the prairies is that which delineates the chaste outline of a lunatic asylum. Behind the gloomy walls of the several institutions of that nature which Western Canada has built, are buried the records of scores of tragedies when the prairie won the gamble.

However, in a general way, the work of subduing the Last Great West went on apace, in the years that intervened, until the Great War engrossed the attention of the world and the tide of emigration flowed eastward.

When Canada heard the "Fall In" played on the bugles of England's "Contemptible" Army, she considered herself fairly prosperous. Her farms covered a wide strip of prairie north of the American boundary line. Her mines were busy. Her real estate speculators frenziedly built, on paper, great industrial centers, with little regard, it must be admitted, to the possibility of markets. Money was plentiful; politicians and captains of industry rubbed their unctuous hands as the tide of unskilled labor flowed in from Central Europe. Farm lands changed hands briskly, and wheat sold for a dollar a bushel.

Then came the War.

The Four-Year Delirium

THE events of the next four years were much the same in Canada as in some other countries. First came the call for men, then for money, then for munitions; then for money, men and munitions, but always the demand for the human sacrifice. From Canada's nine millions of population, eight hundred thousand men from her farms and factories threw down their tools and took up rifles. The inflow from Europe slowed down, the exodus to Europe increased. Prices of commodities rose, as in all other countries. Factories that formerly made bicycles and typewriters began to make shell-fuses and such.

Next succeeded the Great Peace, and the wonderful times of prosperity promised by all the

profiteers. We have experienced this great prosperity for five years now, as a nation, as provinces, as cities, and as individuals. The results are wonderful! For instance, in these times of prosperity our national debt amounts to Five Billion Dollars! This is on the authority of Mr. W. R. Morson in his annual business review of Industrial Canada.

This debt of \$5,000,000,000 at five percent interest calls for \$250,000,000 per annum; and it causes the *Toronto Globe* some concern. It causes the average citizen some concern, too, when he realizes that the country's income from foreign sales, exports, is less than \$100,000,000, which means that the country plunges each year more than \$150,000,000 further into debt. This is a very exhilarating national outlook, especially when the detail of this enormous burden is given some consideration.

The per capita tax is about \$450. But as not every man, woman and child is a producing unit, therefore not a wage earner, approximately but one-fifth of the population can be so considered; so it amounts to about \$2,250 per head for the wage earner. Now, gentle reader (as the older school of novelist fondly addressed you), when are you going to pay your Two Thousand Two Hundred and Fifty Dollars? Possibly you are not feeling so gentle by this time.

The National Debt Ballooning

IT WILL be advisable to pay this amount quickly; for at the present rate of progress it will soon be Three Thousand Dollars. Canada increased the national debt last year by Fifty Million Dollars!

Where did this increase come from?

In 1921-22 there was an apparent surplus of income over ordinary expenditure of \$16,596,752; but by advances to railroads, etc., this was changed into an addition to the public debt of \$81,256,000. In 1922-23 the ordinary revenue was \$393,619,000 and the ordinary expenditure was \$331,780,000. Here is a surplus; but again a paternal government hands the railways and the merchant marine a nice little sum which shows an addition again to the debt of \$49,293,086, or almost fifty millions.

For 1924 Mr. Fielding, our national Wizard of Finance, computes ordinary revenue at \$372,517,000 and expenditure at \$339,000,000; so we rejoice at a possible surplus of \$33,517,000. But

just as our rejoicer gets to working well, he blandly tells us that there will be a capital expenditure of \$23,415,000 and that the dear old railroads will need \$74,500,000. So our surplus becomes a further deficit of \$64,398,000.

Already our Federal taxes are taking our money at the rate of \$40,000 per hour, and our Provincial taxes are additional at the rate of \$500 per year for each wage earner. And then there are the Municipal or City taxes; and, for some of us who like to perpetrate jokes on the laws of Canada, the addition of a few fines. And to sum up the matter completely, we add the tax on our sense of humor as we contemplate the situation in all its beauty and clarity.

Exodus from Canada Significant

WE ARE a great nation. That is, some of us are; for we can smilingly delude ourselves into thinking that Canada is still solvent, and can pay her debts. We can still do this, despite other little evidences to the contrary; for instance:

During 1923 we lost double the number of people in emigration that we gained by immigration. This was no inconsiderable financial loss; and this is still more evident when we consider that the majority of those who left us were our highly trained mechanics and agriculturists—men hard to replace. This makes us only smile still more broadly, however, because few of us realize the cost of immigration today. We forget that the present-day immigrants come to us from countries where there is a debased currency. They are a financial risk as soon as they land. The majority are without any capital, and might better be described as refugees than as immigrants.

Then what is to become of them when they are here? Our national answer is as of yore: "Put them on the land." So on the land they go, to face the same fate as thousands of other citizens who have wrestled with Canadian conditions for many years. Let us assume they go to Alberta.

Sunny Alberta, where the Prince of Wales and Prince Eric of Denmark have their ranches—surely this is the Land of Promise! It is—of Promise to Pay!

The Alberta government recently got tired of the constant pleas of the farmers that they could not meet their tax payments; so they put through legislation called the Tax Recovery

Act, designed to bring about an adjustment of the situation. It did. It resulted in 43,280 parcels of farm lands, each of approximately 160 acres in extent, some much larger; 64,946 parcels of town and village property; and 14,751 parcels of city property, passing from private to public ownership.

To put the matter more clearly, the Government takes from the struggling agriculturist 6,924,600 acres of farm lands, which at a conservative valuation of \$10 per acre amounts to Seventy Million Dollars! Or, to make it still more clear, the area confiscated is one and one-half million acres more than the total wheat acreage of the whole province of Alberta for 1923! In the case of the town and village property, putting each parcel at the extremely low valuation of \$25, the total value amounts to more than Three Million Dollars.

In addition is the city property and other revertible property which, added to the foregoing, gives us a staggering grand total of Seventy-five Million Dollars! Alberta is no doubt a splendid place to send destitute immigrants. And Alberta was settled, to a great degree, by the intrepid homesteader who gambled with the Government and, for a few short years, thought that he had won.

Ruinous Land-Grab Act

THERE is another aspect to the Alberta Land Grab that needs to be mentioned. The Tax Recovery Act is so worded that it amounts to "Government takes all." The man who has a first mortgage on the land is not considered. Neither is the machine company that holds notes and liens against the property as security for farm machinery sold to the landholder.

The Government or the municipality, as the case may be, is only concerned with its tax arrears. Once the title passes, redemption within one year is allowed, if all taxes are paid; otherwise the land becomes the absolute property of the Government.

Very naturally, the loan and mortgage companies are desirous of getting out. Also very naturally, no one wants to risk his capital in any enterprise which is subject not only to such seasonal hazards as is farming, but also to a law which destroys all ordinary financial protection. Alberta looks like facing some hard years; or else there will be an exodus of its already none too large population.

One section of its population already cries loudly for secession from the East, a cry that has been heard from other Western provinces not so very long ago.

Manitoba might seem to offer a good field for the immigrant, were it not for the confessed failure of Premier Bracken to carry on responsible government. Premier Bracken and his parliament inherited much grief when he assumed office, and not very much public confidence. After struggling along for a time he has at last tacitly admitted defeat and has called in a committee of business men from all over the province in an endeavor to find a solution of Manitoba's problem; and she has one.

In the course of the inquiry a beautiful situation was uncovered: Against a revenue of \$26,280,000, from Manitoba's basic and practically only industry, farming, is a tax burden of \$32,000,000; and this indebtedness (for it has not been paid) must be increased in 1924. Drastic cuts in appropriations for education were prepared; and in point of fact many schools are already closed on account of no funds wherewith to pay teachers and to keep up buildings.

The Manitoba crop was not good in 1923. Rust and weeds have ruined a large number of farmers, and many are quitting. Possibly the inadequately capitalized immigrant would like to assume a large slice of this kind of obligation. Not that we desire in the slightest degree to discourage immigration, far from it; on the contrary, we would like to see several thousand worthy colonists come into Canada and gallantly assume (and pay) their proportion of our national debt, say, \$3,000 each. According to our generally admitted to be sound ideas of finance someone must pay it; but who will it be?

FROM ENGLAND

Ecclesiasticism's Sly Hand

THE Archbishop of Canterbury recently sprang a surprise on the country with his statement that during the past three years he and some others had, unofficially, been talking with a Belgian Cardinal of the Roman Catholic Church on the question of unity of the Church of England with Rome. Without doubt these men see clearly that forces are on the move which necessitate a combination of the churches if they are to survive.

The Archbishop's action has raised much pro-

test both in the Church of England and amongst the free churches; for the Protestant religion is the established religion of the realm, and amongst the free churches there is still a good deal of fear of Rome as well as hatred of her methods. And, of course, many see that the only union which these two great systems could have must be like that of the lamb and the wolf, when the one is eaten up by the other.

Rome cannot give way; and if the Archbishop of Canterbury, or even the King of England, should accept Roman Catholicism he must lose his office. England is too set in Protestantism to go over to Rome, though no doubt there will be yet some kind of understanding between them. Organized religion is like the business of the kings: It is in a poor way, and has no future.

The Problems of Labor

THE Labor Party had a great "Victory" demonstration in the Royal Albert Hall the other night. The speakers were moderate in tone; for the party is not out for revolution. Contrary to general opinion, the party is able to put apparently competent men into the very many ministerial positions; at any rate they proclaim that they are ready to carry on the government.

But while the majority of the Labor members of Parliament are moderate men, it has a "left," chiefly the representatives from Glasgow and district, who are not at all moderate, but who seek a complete change in the order and form of government.

Whether or not Mr. Ramsay MacDonald will be able to keep his team in hand is uncertain; for this minority rather fears that the leaders of the party have too much of the intellectual and not enough of the real labor view. They fear that the forward movement will be too slow or be ineffectual, and that the much-needed readjustment of the social life will not be gained.

Considerable doubt exists in the minds of many concerning the relationship of the Labor Party with the "Third International." It is feared that even Mr. MacDonald himself is under some sort of obligation to it, and therefore to the leaders of the Russian revolution. This gives considerable concern to religious people, because Bolshevism or Soviet rule is so definitely anti-religious: it hates the teachings and worship of Jesus Christ. Many of the Brit-

ish Labor leaders are men of a religious turn of mind and are often seen and heard in the churches.

At the present time the miners are balloting on the question of breaking the agreement they entered into some time ago with the mine owners respecting rate of payment. The owners are making plenty of money, and it is said that coal getters are working for starvation wages.

It is evident that there is to be no peace till the present order of things is dissolved. Quite apparently the sluices of trouble are open in order that clearance be made for the new era.

The whole country has been wrapped in a mantle of snow, very pretty to look at, and much enjoyed by some of the young folks. But the storms which brought it have been hard on the cattle, and the poor of the country and of the towns have suffered much hardship. Of course the coal merchants took the chance to raise the price of coal.

While things look dark in the affairs of men, nature is keeping up and showing what can be done. At Messrs. Sutton & Sons' exhibition yesterday (Mid-January) they showed, so this morning's papers say, onions like cannon balls, weighing over two pounds; carrots two feet long, and parsnips nearly four feet long. As the parsnip was only three feet last year, there is evidently a great future for it.

Later Information

IT IS now a week since Ramsay MacDonald was sent for by the King, and kissed the King's hand on acceptance of office. And as yet the skies have made no intimation of having noticed any change; the heavens have not fallen.

Some panicky persons have bought American dollars, believing that they would do well to themselves by doing so. "Patriotism," that strange thing of which the same people make so much, is forgotten when self-interests are touched. But the country is not moved; there is no noticeable singing of the "Red Flag," but there is a disposition to give the Government a chance.

The Conservative party which, by throwing the country into a general election in order to strengthen itself, opened the door to this "visitation," now blames the Liberal party for not helping it to shut the door in the face of the Labor party. There are now just the right num-

ber of parties necessary to bring confusion on the country; and the situation is exactly suited for trouble. At present they have no ear for the announcement that the kingdom of heaven is being set up; but when the caldron has boiled and fallen over, some at least will believe.

How different things could yet be if these men would stop and listen to the Bible message, and to the voice of God! They would lose confidence in Shakespeare's "there's a divinity which shapes our ends, rough hew them as we will," a word which was never true except to those who sought to be conformed to the will of God; and they would see that God is proving the wisdom of the world to be a fruitless tree. He is confounding the wisdom of the worldly-wise, and bringing to nought the understanding of its prudent men.—1 Corinthians 1:19.

There seems to be no immediate danger of Britain's being subjected to a capital levy. No doubt there are bank balances and large estates which could be tapped without hurt to their owners. But the gain got from a levy and applied to the reduction of the war debt and taxation would be more than offset by the seizure of the money now available for trade. Trade would be hampered by the loss of its currency, and there would be still more unemployment than now. The country is in too tight a corner for this heroic measure, many years ago enforced in Israel.—2 Kings 23:35.

There are many in Britain who very much regret the action of the unscrupulous persons who are making money out of the rum-running in Rum Row, seeking to sell their vile stuff contrary to the law of the United States and the wishes of its people; and they agree with the Editor's remarks about the detestableness of the whole business.

But the implied idea that the Government of Britain is responsible raises another question. If the situation were reversed and the boot-leggers of America were to compass "dry" Britain with whisky ships, would the United States Government take action against ships flying the American flag engaged in the trade?

Probably the new Labor government is wholly against this detestably vicious trading; but the world being constituted as it is, even it could not order its warships out as patrolling vessels to destroy the commonly accepted rights of men.

Enginemen on Strike

ABOUT 50,000 locomotive drivers and firemen have now been on strike more than a week. They have succeeded in bringing a great amount of discomfort upon the people, and much commotion in trade; and in alienating sympathy from trades unionism when badly handled. The wages award, which they said they would accept and then would not do so, brought a reduction to 2,400 men, but not such a one as to entail suffering. The leader of the union has thrown the whole country into trouble, and scores of thousands into distress, because he believes that the railways can afford to pay the present wage. Perhaps they can afford it; but the action in its way seems as heartless as a declaration of war merely for balance of power, so often given as the only reason.

Although there was much speculation as to the effects the ascendancy of the Labor Party would have upon the markets and business in general, hardly a ripple stirred the economic situation after the first quiver in the money market subsided. The pound sterling dropped, but it is regaining its vigor.

The "scare" is wearing off and "normalcy" is being restored. The Labor parties are largely theoretical; and not being cocksure that their conception of government is workable there is a hesitancy about putting their theories into operation. The financial interests are powerful, and they have a way of their own in intimidating others; they have the medium of exchange mastered so well that the fluctuations, up or down, will instantly respond to their wishes. This time money was depreciated. It was up to Labor to stabilize the currency of the country. Labor did so through its leaders hastily declaring a conformity to the old order of things.

Mr. J. H. Thomas is the new secretary of the Colonies. He and the Prince of Wales were guests recently of the Australian and New Zealand Luncheon Club, London. In a speech Mr. Thomas said:

"This great change has taken place without any disturbance, without any upheaval. British trade, commerce, and finance are progressing as if nothing had happened. We are all settled down to the fact that there has come into being, and is governing our great Empire today, a new party. There were many who were

perdition from the Protestant Church's program of post-mortem entertainments; it has taken a long, weary time to persuade American Presbyterians to give up infant damnation and to bear it the best they can. I fear that our fetish is safe for three centuries more. When a thing is sacred to me it is impossible for me to be irreverent toward it. I cannot recall to mind a single instance where I have been irreverent except toward the things which were sacred to other people."—From Mark Twain's "What Is Man?"

Judge Rutherford's Letter

Brooklyn, N. Y., January 16, 1924.

PROF. JAMES WARREN JOHNSON,
Press Club of Chicago,
Chicago, Illinois.

My Dear Sir:

Yours of January 8 to hand. I thank you for your frankness of speech. Your difficulty lies in the fact that you do not believe the Bible, and of course do not understand it. If you understood it you would see that it proves itself as of divine origin; for no human mind could construct such a tremendous and far-reaching plan as is there outlined, and which has been in process of development during the past six thousand years.

I note that you question the existence of Jesus. This matter is not open to argument. The fact that Jesus lived on earth, taught in Jerusalem, was crucified and died, and was raised from the dead, is so fully and completely established that I would not indulge in a serious discussion of the proposition.

I presume that you doubt also Saul of Tarsus, whose name was afterward changed to Paul. The wisdom of this world, I know, now rejects the Bible, rejects the Lord Jesus, and hangs its hope upon evolution. This is indeed a flimsy thing upon which to base a hope. I am reminded of the words of St. Paul when he said: "Where is the disputer of this world? hath not God made foolish the wisdom of this world? For after that in the wisdom of God the world by wisdom knew not God."—1 Corinthians 1:20, 21.

I note what you say about the Jew. Your definition of a Jew and mine differ entirely. Every man who is a natural descendant of Abraham is not a Jew within the meaning of

the Scriptures. The profiteering class that go about in America (to quote your language) to "skin" and exploit the people are not Jews. A Jew, in the Biblical meaning of that word, is one who has faith in the promise that God made to Abraham when He said: "In thy seed all the nations of the earth shall be blessed." (Genesis 22:18) There are not many of these at this time. I do not think that the so-called American Jew will go to Palestine, or even care to go. But the time will come when the Jews will get their eyes opened to the fact that He whom their ancestors after the flesh crucified is really the Savior of the world.

I do not give much weight to Mr. Zangwill's opinion concerning the Jews, because confessedly he is not a Jew himself.

You ask me about Emerson's essays on religion, and Thomas Paine's "Age of Reason." These gentlemen were not Christians. They did not believe in the Bible, nor in the Lord Jesus Christ, and knew nothing about God's plan of salvation. They were men of splendid mental capacity, but that is not all that is required.

I am familiar with Mark Twain's writings, was born and reared in the same state from which he came, and know much about him. And while I agree with some of the things he said about eternal torture and the damnation of infants, I do not agree with him that there is no personal devil. The devil by his seductive power has overreached the minds of the majority of peoples of earth today and is driving the nations and peoples headlong into a terrible time of trouble such as has never been known, and which is just ahead, and which statesmen of the world can see and freely mention, but to avert which they know no adequate remedy.

As to logic and reason, the greatest logic, the most profound reasoning to be found in any literature on earth, is that found in the Scriptures. As a lawyer I long ago learned that the very foundation of the laws of civilized nations is taken from the law that God gave to Moses. The wisdom expressed by Solomon and the logic of St. Paul are unequaled in any literature known to man.

I have no doubt that your letter and this answer will be published in THE GOLDEN AGE in due course. I assure you of my best wishes.

Sincerely,

J. F. RUTHERFORD.

Reply To Ingersoll—In Two Parts (Part I) By Pastor Russell

[Robert G. Ingersoll is only a name to the present generation, but he was a power while he lived. We print below a famous reply to his charges against Christianity. This little pamphlet, long since out of print, will be new to most of our readers.—Ed.]

MR. ROBERT INGERSOLL, in his now celebrated "Christmas Sermon," took Christianity severely to task, and awakened considerable excitement in religious circles. The Rev. Buckley, D. D., of the Methodist Episcopal Church, New York city, declares that the pith of Mr. Ingersoll's "Christmas Sermon" is found in three charges which he makes against Christianity, and which Dr. Buckley denominates "three gigantic falsehoods." They are as follows:

First: "Christianity did not come with tidings of great joy, but with a message of eternal grief."

Second: "It [Christianity] has filled the future with fear and flame, and made God the keeper of an eternal penitentiary destined to be the home of nearly all the sons of men."

Third: "Not satisfied with that it [Christianity] has deprived God of the pardoning power."

Some of the friends of Christ, of the Bible and of true Christianity urge that this modern Goliath be answered by some pebbles of truth from our sling, directed not against a great and seemingly honest man, but at the system of errors which he, no doubt honestly, supports; and in defense of the truth and of the timid and doubting children of Zion, "Israelites indeed."

Charge I Examined

WE REPLY to the first charge that, whilst the name Christianity stands for much that is spurious both in doctrine and in practice today, Mr. Ingersoll's arraignment relieves us from the necessity of examining these; for his remarks apply only to the inception of the Christian system, the message with which it came. The issue is a fair one. Christianity could not be judged more fairly than by the doctrines of its founders.

Reversing the order of the statement, we will demonstrate (1) that Christianity did not come with a message of eternal grief, and (2) that it did come with good tidings of great joy which shall be to all people.—Luke 2:10.

The New Testament embodies a statement of all the doctrines and teachings of primitive Christianity, and neither the term "eternal grief" nor any equivalent term is to be found

therein. Grief is indeed implied in the statements which predict some serious disappointments among church people in the end of the present age (Matthew 8:11, 12; 25:30; Luke 13:28); but none of these say one word about an eternity of grief and pain. It is true also that a certain parable (Luke 16:19) represents the downfall of the Jewish polity from divine favor; and that, as a "rich man faring sumptuously," etc., represented that system, so the trouble into which that people then passed (and in which they confess that they have been since) is represented by the symbols of fire and torment; and the simultaneous acceptance to divine favor of the humble of the poor Gentiles, previously outcasts from special divine favor, is represented by the carrying of Lazarus to Abraham's bosom, the bringing of those hitherto aliens into the family of God as children and heirs of the Abrahamic promises and blessings. The fire and the torment are as truly symbolic as the other features of the parable. And even then, there is no threat that the rich man's grief and torment shall be "eternal." On the contrary, the apostle Paul shows most pointedly that the heart-blindness to the truth which led to the rejection of that nation, and which has ever since stood more or less related to all their trouble, is to pass away shortly, during the period of the second presence of our Lord. The Apostle concludes the subject in any but a mournful and grievous strain, saying, "O the depth of the riches, both of the wisdom and knowledge of God! How unsearchable are his righteous acts and his plans past [man's] conception."—Romans 11:25-33.

We do not forget, either, that other parable of the Sheep and the Goats, and the concluding sentence relative to the goat class: "These shall go away into everlasting punishment: but the righteous into life eternal." We acknowledge freely that the words *everlasting* and *eternal* here used are translations of the same Greek word, and that they evidently mean *without end*. But we call attention to the fact that the penalty named upon even the wilfully wicked does not read *grief* without end, nor *torment* without end, as many seem to suppose; but *punishment*

without end. It is a mistake to suppose, as some do, that *punishment* necessarily implies pain, torture, or any conscious suffering. On the contrary, "capital punishment" among civilized nations means *death* inflicted in as painless a manner as may be.

True, everlasting torment by burning or by freezing would be an everlasting punishment as truly as everlasting death would be; and *vice versa*, an everlasting death wherein is no consciousness of either pain or pleasure would also be an everlasting punishment. Hence we see that the mere statement "everlasting punishment" proves nothing as to the *kind* of the punishment. But other scriptures make the subject quite plain by telling us in just what the punishment, which will be everlasting, will consist, saying, "The wages [or punishment] of sin is *death*." (Romans 6:23) Hence the everlasting punishment declared to be the just merit of wilful sin will be everlasting death, a death which will never end, from which there will be no resurrection, and consequently not endless torment and grief.

But let us look closer at this text: "These shall go away into everlasting punishment: but the righteous into life everlasting." We note that "life" is put as the opposite or antithesis of the word "punishment," as though the inference should be that the punishment is death. Let us look at the Greek word rendered "punishment." If it were intended to represent torment it would be *basanos*; but no! it is *kolasin*, the primary significance of which, according to the best Greek scholarship, is *To cut off*, as when useless or dead branches are cut off or pruned off from a tree or vine. Here, then, the antithesis is seen: The righteous at the end of the trial referred to in this parable (which trial will last during the Millennial age) will enter upon a state of everlasting life, while the wicked will be cut off (from life) everlastingly.

Nor need we pass by the statement of verse 41: "Depart from me, ye cursed, into everlasting fire, prepared for the devil and his angels." Here the *fire* is as much a symbol as the sheep and the goats of the preceding verses are symbols. As sheep represent an obedient class and goats a wayward class, so fire represents something. It never represents preservation, but always represents *destruction* to whatever comes under its power. And, elsewhere, the same New

Testament writers declare, both with and without symbols, that the devil is to be *destroyed*.—See Hebrews 2:14; Romans 16:20.

Next we examine briefly our Lord's references to Gehenna fire, in which He mentions the worm that dieth not and the fire that is not quenched. But even here not a word about endless grief or endless torment. Indeed, the reference is clearly not to fire and worms in some other world, but to fire and worms which the people addressed knew of and could see. Outside the south wall of Jerusalem is the Valley of Hinnom or *Gehenna*, once quite deep but now much filled with debris and soil. In the days of our Lord this valley was used as a place for destroying the garbage of the city and the dead carcasses of animals; and to insure quick destruction and thorough disinfection brimstone is said to have been freely used. No one quenched those fires; and those carcasses which lodged upon rocks, and did not reach the fire, the worms consumed without hindrance. But no living thing was ever cast into this valley, the Jewish laws governing even the lower animals being most humane. And our Lord's remarks furnish no suggestion of casting living beings into this or any similar place—or of torment at all. A similar expression, doubtless based on the same facts, is used by the prophet Isaiah; and he specifies that the fire and worms feed not upon living creatures, but upon "carcasses."—Isaiah 66:24.

The Jews had a custom, however, of refusing the usual burial to some of the very vilest criminals; and, instead, they cast their *dead* bodies into this valley with the filth of the city, thus implying that such a one should be esteemed as of the offscourings of society, and that his memory should rot; and furthermore that in their estimation he had no hope of a resurrection—a tomb being to them an emblem of a resurrection, of a hope of future life. Our Lord expounded the Law of God in a much more full and heart-searching manner than the ordinary teachers, and illustrated by His teachings (Matthew 5:21-35) that the *thoughts* are to be considered as well as the *deeds*. The Law said: "Thou shalt not kill," and "Thou shalt not commit adultery," and prescribed penalties for these misdeeds. But said the Great Teacher, magnifying the Law and making it still more to be revered (Matthew 5:21-28): I put the matter more searchingly, and assure you that

to have murder or adultery in the heart is to be a murderer or an adulterer—a violator of the Law, whose violation forfeited all right to life under the Jewish covenant.

It is while thus emphasizing the Law that our Lord says: Whosoever shall be angry with his brother and call him *apostate wretch* shall be in danger of (or liable to) Gehenna. Just as we might say today: The person who gets passionately angry with his brother or neighbor, and speaks and acts violently, is in danger of or liable to yet end his life on the gallows; for he has a murderous disposition in his heart.

Probably only the leading features of this great discourse are given; but following on in this train of thought the Teacher passes from the literal Gehenna and its destruction of offal and filth, to represent by it the ultimate end of wilful sin before the higher tribunal, the Judge of all the earth. He urges all who would have *everlasting life* that although a pleasure or habit contrary to God's law be as precious to them as a right eye or a right hand, they should gladly part with it and submit themselves to God's plan of holiness. Then He reasons on the matter thus: Would it not be more profitable to cut off these depraved pleasures of the present brief life and be accounted worthy of an endless life of felicity and perfection which God has prepared for those who love Him, than to hold and enjoy all the sinful pleasures for the present brief life and be accounted of God as the filth and offscouring of His universe, to be disposed of in an antitypical Gehenna—the second death?

Admitting, as all scholars must, that the literal valley of Gehenna formed the basis of our Lord's remarks, it must be admitted also that that which it was used to typify was *somewhat like it*. And as the literal Gehenna was not a place of torment or grief, but represented the utter destruction and hopelessness of those (already dead) cast into it, so must its antitype teach the same lesson. And so it does. The second death is brought to our attention (Revelation 21:8) as the hopeless destruction of all the finally-impenitent, the wilfully wicked, who, in spite of the knowledge and grace to be abundantly supplied to all "in due time," will still choose sin and spurn God's righteous way.

Not only have we seen that the expression *eternal grief* is not used in the Scriptures, nor

any equivalent expression, but we have examined every text of the New Testament outside of the symbols of the Book of Revelation in which some such *thought* might be supposed to lie concealed, and find that Mr. Ingersoll is mistaken in his assumption. And if we now glance at a few isolated verses in the Book of Revelation, supposed by many to teach everlasting torment, and hence everlasting grief, we shall find these to be *symbols*, like all the other features of that book of symbols.

Revelation 20:9, 10: These verses represent a scene at the close of the Millennial age, when, under the reign of the glorified Redeemer and His glorified bride, the church, all the world shall have been blessed with full release from error and superstition; when all shall have been brought to an accurate knowledge of the truth and ability to obey it; when the final test as to love and loyalty to God shall have been applied to all the world, then as numerous as the sand of the seashore; and when this test shall have separated the unfaithful, wilful "goats" from the trusting, obedient "sheep." Verse 9 shows the *destruction* of all the disobedient, the "goats," just as did Matthew 25:46. Verse 10 speaks of the devil; and whether it refers to a *system of evil*, a form of sin, or whether to the literal devil, matters not to our argument. (We are not called upon to discuss whether or not the devil will have some torment. We are plainly assured that he shall ultimately be *destroyed*.) We notice, however, that the verse is highly symbolic; for "the beast and the false prophet" mentioned are symbols, and hence the torment of those symbols must be figurative or symbolic torments. And at all events it has nothing whatever to do with men, the evilly disposed of whom, verse 9 distinctly states, are to be destroyed.

Verse 15 of the same chapter, foretelling of the same judgment at the end of the Millennium of favor, declares: "Whosoever was not found written in the book of life was cast into the lake of fire." This might indeed imply torment, were it not that the preceeding clause distinctly explains that the lake of fire signifies the *second death*, as also does verse 8 of the next chapter, speaking of the destruction awaiting the same class.

Revelation 19:3 speaks of symbolic Babylon; her "smoke [remembrance] rose up for ever." But it is to a symbolic woman and not a literal

one that this statement applies. The symbol refers to a great *system* whose fall from vast power misused is graphically portrayed in symbol in chapter 18. We will not here identify this "woman," "Babylon," as it is not pertinent to this discussion.

Revelation 14:8-11 is the only remaining passage to examine, and it is by far the most difficult to make plain; because the average reader has no adequate conception of the significance of the connecting symbols, the beast and his image of the preceding chapter. These represent great religious systems which already exist and have millions of devotees among Christian peoples; and one of these, the "image," will yet, by closer federation of smaller religious systems, become much more influential and arbitrary.

This will be in the end or "harvest" of this age and the dawn of the new Millennial age, which the Scriptures declare will be introduced, not by peace, but by a time of trouble such as was not since there was a nation. It will be in the presence of the Lamb, *i. e.*, "in the days of the Son of man" (Luke 17:26)—in the *parousia* (presence) of the Son of man (a spirit being, unseen by natural sight), while the world in general is proceeding with its usual affairs—eating, drinking, planting, building, etc. (Matthew 24:37, 38). The thought here is beclouded to the English reader by the mistranslation of *parousia*, which is rendered *coming* instead of *presence*.

It will be during this period of the Lord's presence, and before He shall have put down all opposing authority and power, and while intelligence will be spreading over the world, that the great religious systems referred to in Revelation 13 will exercise their power and authority to hinder increasing light; and by them the doctrine of eternal torment will be enunciated afresh and impressed; and all who reverence these systems will be tormented by their doctrines of fire and brimstone and by fear for friends whose eyes have been opened so that they deny the reasonableness of such a belief. (Compare Isaiah 29:13, 14). Thus these will be in torment so long as they worship (reverence) these human institutions and their doctrines more than and instead of the Word of the Lord. But that this torment will be in the present life is as evident as that it will come

as a natural result of disregarding the Lord's way and following instead the traditions of men; for the "beast and his image" and their worship surely belong to this world; and that it will be before the present age is fully ended is shown by the succeeding verses.—Revelation 13:12, 13.

Before leaving this side of this question it will strengthen it if we shall notice that the apostles Peter, Paul, James, and John—aside from the Founder of Christianity certainly the greatest theologians of the Christian church, and the only ones whose teachings can be recognized as of plenary inspiration—have not one word to say relative to the punishment for sin being eternal grief or eternal torment. On the contrary, every one of them declares in unequivocal terms that life everlasting will be the reward of all who will return through Christ to acceptance and fellowship with God; and that *destruction* everlasting will be the ultimate fate of all who, after full knowledge and blessing under Christ's kingdom, wilfully reject righteousness and practise sin. For these testimonies as to the reward being life, see John 3:16; 5:24; 6:54; 10:28; Romans 2:7; 6:23; James 1:12; 1 Timothy 1:16; Acts 11:18; 1 Peter 1:4, 5, 9; 1 John 2:25. For their testimonies as to the penalty of wilful sin being death, destruction, see Philipians 3:19; 2 Thessalonians 1:9; 2 Peter 2:1; Acts 3:23; James 4:12; 1:15; 1 John 5:16; John 3:36; Matthew 10:28. And if the scope of investigation be extended to the Old Testament, the same will be found to be the testimony of all the holy prophets since the world began.

The word *hell* in our common version of the Bible is very misleading in this connection, implying as it does to the majority of readers a place of consciousness, of fire and pain. Nothing could be further from the real meaning of the word *hell*, as may be seen by consulting Webster's "Unabridged Dictionary," where the primary meaning is shown to be "the place of the dead"—"or the grave; called in Hebrew *sheol*, and by the Greeks *hades*." Webster tells us further that this word *hell* comes from the old word "*hele*—to hide, to conceal, to cover, to roof." And so we find it used in old English literature in referring to the putting of potatoes into pits and in speaking of thatching or covering a house.

Turning to the Hebrew and Greek of the original Scriptures, we find the corresponding words *sheol* and *hades* to have a corresponding meaning, as Webster avers. These original Hebrew and Greek words occur in all seventy-six times in the common version English Bible, and are forty-one times translated *hell*, three times translated *pit*, and thirty-two times translated *grave*. The difficulty is not so much in the translation—if the word *hell* be given its primary meaning: "The place of the dead," "the grave"—but in the fact that for several centuries past a *theological*, secondary definition has been attached to the word *hell* which makes it mean a place of torment for the living, the very reverse of the original or primary meaning of the word, as all scholars know or should know.

We, therefore, call upon Mr. Ingersoll to concede that he erred in saying that Christianity came with a message of eternal grief; or else that he specify, giving chapter and verse, not overlooking our citations and explanations above.

(2) Let us now examine the other side of this first charge, and see if Mr. Ingersoll was correct in claiming that Christianity did not come with tidings of great joy.

It was when the babe Jesus was born that the multitude of angels, inspired from above, sang, "Glory to God in the highest, and on earth peace, good will toward men!" It was the angel sent to tell the shepherds of the same great event who said unto them: "Fear not: for, behold, I bring you good tidings of great joy, which shall be to all people. For unto you is born . . . a *Savior* [Syriac, *Life-giver*]."—Luke 2:8-14.

This is the message with which Christianity came; and this, not what it now variously declares, is our topic. Men realized that they were dying, and they desired *life*. God had offered life to the Jewish nation if they would keep perfectly the Law given on Sinai. God well knew that fallen, imperfect men could not keep that Law, and therefore could not secure everlasting life under it; and the Israelites soon found how true this was as one by one they died, and thus proved that by the deeds of the Law none of them were justified in God's sight. (Romans 3:20) But God's plan was to teach them, and through them to teach all men, the need of a *Savior*, a *Life-giver*, who should

redeem all from the original sentence of death and restore to perfection of life and being all who would accept His covenant of life. Long centuries had faithful Jews waited and looked for the promised Messiah, who should be their Redeemer and Life-giver. And no wonder, then, that His birth was announced as good tidings.

True, the Jews overlooked the part which said that these good tidings should yet be unto *all people*, and supposed that it would be only to the Jews. True, also, the civilized few who have yet heard the message of God's favor to men through this Life-giver have framed creeds and theories which virtually declare this angelic message a falsehood by teaching that all hope of hearing about and believing on Jesus is limited to the few years and accidental circumstances of this present life. Let us, nevertheless, stick to our text and acknowledge that, whatever be the tidings of today, Christianity did come with a message of "good tidings of great joy, which shall be [made known] unto *all people*"—not only to those who since His birth and death have died in ignorance of the *only name* whereby we must be saved, but also to the billions who had died before God's salvation was brought to light in the gospel. Does this imply the awakening of the dead? Even so. It is provided that "*all* that are in the graves shall hear [obey] his [the Son of man's] voice, and shall come forth"; and then, as the testimony of these glad tidings shall reach *all people*, the message further is that "they that hear [obey] shall *live*"—live everlastingly—while such as will not obey will be destroyed from among His people.—John 5:28, 29; Acts 3:23.

When it is remembered that the apostle Paul was a most logical and truthful writer, that his writings cover all subjects connected with the gospel and constitute a large portion of the New Testament, and when we hear him say, "I have not shunned to declare unto you all the counsel of God" (Acts 20:27), and yet withal find not one syllable about eternal grief, we begin to understand why he could so heroically defend the gospel which he preached. And we can then appreciate his exclamation, "I am not ashamed of the gospel of Christ; for it is the power of God unto salvation to every one that believeth!" Ah, yes! The reason that so many Christian ministers today are ashamed of the gospel they preach is that to a great extent they preach

another gospel, a gospel of eternal grief, which Paul did not believe and did not preach. But, examining the evidences, we are fully assured that Christianity did not *come* with the message of grief, but with tidings of great joy which shall be made known unto all people. Ah, yes! exclaims Brother Paul, quoting from the prophet Isaiah, 'How beautiful are those proclaiming good tidings of good things.'—Romans 10:15; Isaiah 52:7.

Hear the apostle Paul again, preaching this message even when his life was threatened. He says: "And we declare unto you *glad tidings*, how that the promise [of a Messiah, a Life-giver] which was made unto the fathers, God hath fulfilled the same unto us their children. . . . Be it known unto you, therefore, men and brethren, that through this man is preached unto you [not a message of eternal grief, but] the forgiveness of sins; and by him all that believe are justified [cleared, freed] from all things."

This would indeed be glad tidings to all who understand the message. Indeed, the objection urged against that early gospel was that it was too good to be true. They could not conceive of any better message than their Law, which offered *everlasting life* to all who would obey it perfectly. (Romans 10:5; Galatians 3:12) But this gospel with which Christianity came to them declared that they could never merit everlasting life under the covenant of works, because all are fallen from perfection and hence from ability to do perfect works. And the glad tidings of the gospel of Christ consisted in showing that, in Christ, God had provided for all men a *way of obtaining everlasting life*; that as all mankind fell under condemnation to *death* (not to eternal torment and grief), and into mental, moral and physical imperfection, by Adam's disobedience (they, being in his loins, inherited in a most natural way all the effects of his fall), and thus lost with him all right to life, so God had provided that Christ should *purchase* the life of Adam (and of the race which lost life through him) by the sacrifice of His own life as a *sin-offering* on their behalf. This provision was made in order that through this Redeemer (in due time) the offer of life everlasting might be granted to each member of the race upon condition of obedience to His laws. And, better than the Jewish Law (which really justified none—Hebrews 10:4; Galatians

2:16; Acts 13:39), the proposal under this new covenant, in Christ, was that the obedience of each should be judged, not by his actual works, but by his intentions and efforts—the *sin-offering* of Christ compensating for all unintentional weaknesses and errors, to every one that believeth. The Jews thought these tidings too good to be true, and clung to the Law.

Who can read the New Testament epistles and not be struck with the joyous spirit of the writers, even while they were enduring afflictions for the preaching of these good tidings of which they were not and had no need to be ashamed? Judge of the contrast: How many thousand dollars a year would it take to hire a man of the apostle Paul's ability to preach the message of eternal grief one hour each week? But note that Brother Paul was so enthusiastic with his message of the *grace* of God through Christ, the "good tidings of great joy, which shall [yet] be [made known] unto all people," that he forsook an honorable, influential and lucrative position among men and spent his life in the service of these *good tidings*, often suffering imprisonment and stripes, and even with a lacerated back in prison singing praise to God, because he was accounted *worthy* to suffer in the service of such a Master and such a gospel of which he was not ashamed. But his gospel had no element of eternal grief in it.

So, then, it is not true that Christianity came with a message of eternal grief; but the contrary is proven: That it brought good tidings of great joy of which no sensible man needed to be ashamed.

Charge II Examined

DOCTOR BUCKLEY points out, as the second gigantic falsehood of Mr. Ingersoll's discourse, his statement that "it [Christianity] has filled the future with fear and flame, and made God the keeper of an eternal penitentiary destined to be the home of nearly all the sons of men."

We presume that Dr. Buckley's objection is that not Christianity, but God, has filled the future with fear and flame. But on this point we must agree with Mr. Ingersoll. The fact cannot be disputed that the future is full of fear to the civilized world—fear either for themselves or for their friends. And after examining the Scriptures, as above, we find that God is not

responsible for this fear, nor did Christianity come with a message to produce such fears. And the pages of history clearly show that the doctrines which produce these fears began to be introduced in the third century, when the church (nominal) began to fall away from the simplicity of the faith of Christ and the apostles, giving heed to the seducing influences of Pagan philosophy and to "doctrines of devils"—devilish doctrines indeed, blasphemies upon the divine plan and character. (This was clearly predicted by the Apostle. See 1 Timothy 4:1; 2 Thessalonians 2:3.) And the Bible, in so many words, asserts that these fearful doctrines are of human fabrication, saying, "Their fear toward me is taught by the precept of men."—Isaiah 29:13.

We see but one exception that can justly be taken to Mr. Ingersoll's statement in this case; namely, his charge that Christianity makes God the keeper of an eternal penitentiary. We object to the word *penitentiary*. A penitentiary is a *reformatory* institution, more nearly corresponding to the "purgatory" of Roman Catholicism; but the "hell" claimed by both Romanists and Protestants, but which we have found to be without authorization in God's Word and taught only "by the precept of men," is not a penitentiary, but a *hopeless* prison of despair, described by that admired but greatly mistaken good man, Dr. Isaac Watts, thus:

"Tempests of angry fire shall roll
To blast the rebel worm,
And beat upon the naked soul
In one eternal storm."

There could be no objection made to a penitentiary with *just* restraints and retributions for sins. And indeed the Bible does teach that the entire earth will shortly be turned into a vast penitentiary (during the Millennial reign of Christ) in which not only will all mankind be under the restraint of an iron rule, with righteousness laid to the line and justice to the plummet, but that then all shall also be brought to an accurate knowledge of the truth, that they may be saved. (See 1 Timothy 2:4) But this divinely arranged penitentiary of the next age is not to be an *eternal* one. No, thank God, it shall accomplish its designed object by bringing to perfection and harmony with God all who, after full knowledge, shall demonstrate their love of righteousness and truth; and by cutting off from life and hope, in the second death, all those who, after full knowledge, love sin. (Revelation 21:7, 8) Then will come the time when God will have a clean universe, free from sin and free from penitentiaries. And then there shall be no more death, neither sorrow nor crying; for the former things [associated with sin] shall then have passed away (Revelation 21:4), and heaven and earth shall be filled with the glory of the Lord.

(To Be Continued)

Child Slavery Increasing By Alice Park

CHILD labor of forty-eight varieties continues in the forty-eight states of the United States. Child labor does not mean selling newspapers after school nor working a few hours on holidays. It means toiling long hours at machines in factories and fields, excessive tasks at low pay, and no time for education, play, or healthy growth.

A federal amendment is a necessity. Congress might easily have passed a new child labor amendment to take the place of the one eliminated by the Supreme Court in May, 1922; but it has not done so. It has lost more time.

Children less than six years old are sometimes discovered to be daily child laborers. Children less than twelve years old are working

by thousands. Sixteen is the age of protection already secured in several countries; and it is the aim of our National Child Labor Committee.

Counting only the children between ten and fifteen years, 1,060,853 is the census figure of, 1920; but child labor is increasing. Unemployment of men and women is increasing. Children are shoving men and women out of jobs.

There are states that have enacted and enforced good laws against child labor. But even the people who live in model states—and such states are rare—use goods produced in all the states. So all people who use food, clothes, tools, toys and newspapers are using articles produced in part by child labor. All states are fully responsible.

STUDIES IN THE "HARP OF GOD" (JUDGE RUTHERFORD'S LATEST BOOK)



With Issue Number 80 we began running Judge Rutherford's new book, "The Harp of God", with accompanying questions, taking the place of both Advanced and Juvenile Bible Studies which have been hitherto published.



²⁷²St. John, subsequently writing concerning the Lord, emphasizes the fact that they saw with their own eyes, saying, "That which was from the beginning, which we have heard, which we have seen with our eyes, which we have looked upon, and our hands have handled, of the Word of life; (for the life was manifested, and we have seen it, and bear witness, and show unto you that eternal life, which was with the Father, and was manifested unto us;) that which we have seen and heard declare we unto you, that ye also may have fellowship with us: and truly our fellowship is with the Father, and with his Son Jesus Christ. And these things write we unto you, that your joy may be full."—1 John 1:1-4.

²⁷³Thus we see there were more than five hundred witnesses who testified to the resurrection of the Lord Jesus. This alone should establish the fact beyond any question of a doubt; but when we see the reason for the Lord's resurrection, the whole matter not only becomes clear but brings great joy to the heart of one who sees it. We must furthermore consider that these faithful witnesses of the Lord did not go to some isolated place to give their testimony concerning His resurrection, but they gave it openly before the tribunals, before Jews and heathen philosophers, courtiers, lawyers, as well as the common people. They did not wait until years afterward to begin to give their testimony concerning His resurrection, but did so immediately after the great event took place. They were so bold in declaring it that had there been a possibility of refuting their testimony we may be sure that the Pharisees would have attempted it. They did not give this testimony for the purpose of gaining fame, glory, or riches. But, on the contrary, they knew that they would bring upon themselves the indignation of the Pharisees and rulers and would expose themselves to suffering and death.

²⁷⁴At Pentecost, only fifty days after the resurrection of the Lord, the apostle Peter stood forth before the multitude and proclaimed to the men of Judea and all that dwelt in Jerusalem concerning the resurrection of the Lord. In

his eloquence he exclaimed: "Therefore let all the house of Israel know assuredly, that God hath made that same Jesus, whom ye have crucified, both Lord and Christ." (Acts 2:36) So persuasive and convincing was the Apostle's argument that the Jews who had participated in having the Lord put to death "were pricked in their heart, and said unto Peter and to the rest of the apostles, Men and brethren, what shall we do?" Some of them suffered death and martyrdom because they preached Christ and his resurrection. (Acts 7:1-9) The apostles and early Christians received much persecution because they testified boldly that Jesus was raised from the dead. They would not have done this had they been trying to carry out some fraudulent imposition. Their motive in preaching these doctrines was to be witnesses for the Lord concerning the fulfilment of His great plan for the redemption and deliverance of mankind.

QUESTIONS ON "THE HARP OF GOD"

What further testimony did St. John subsequently give concerning Jesus Christ's resurrection? ¶ 272.

How many witnesses testified to the resurrection of our Lord Jesus? ¶ 273.

Where did these faithful witnesses give their testimony concerning the resurrection of the Lord? ¶ 273.

Did they endanger themselves by giving such testimony? ¶ 273.

The fact that they gave it immediately and boldly, what weight does that add to its truthfulness? ¶ 274.

What was their motive in testifying of the Lord's resurrection? ¶ 274.

Did anyone suffer martyrdom because of giving testimony to this effect? Give Scriptural proof. ¶ 274.

The Golden Age By Mrs. G. W. Seibert

The Golden Age of prophecy, by holy men foretold,
When right shall triumph o'er the wrong of centuries grown old;
When in the desert springs break forth, wastes blossom as the rose,
And health and happiness are borne on every breeze that blows;
When sin and death shall pass away and every human heart
Be filled with love, until this earth shall seem of heaven a part.

Ah, then, poor world, come dry your tears and banish every fear;
Lift up your heads, rejoice and sing—the Golden Age is here!

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The Way to Paradise



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Chapter II	THE CREATION OF THE EARTH
Chapter III	THE CREATION OF MAN
Chapter IV	WHY DID ADAM DIE?
Chapter V	WORLD NUMBER ONE
Chapter VI	WORLD NUMBER TWO
Chapter VII	THE PRINCE OF THIS WORLD
Chapter VIII	THE KINGDOMS OF THIS WORLD
Chapter IX	THE NEW COVENANT OR CONTRACT
Chapter X	WORLD NUMBER THREE—THE KINGDOM OF CHRIST
Chapter XI	PRINCES IN ALL THE EARTH
Chapter XII	THE KINGDOM OF GOD

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