STIMULATING HORTICULTURE WITH ELECTRICITY

ROGUE RIVER CAPITALISTS TO EXPERIMENT ON LARGE SCALE IN INCREASING THE PRODUCTIVITY OF PLANTS

COLONEL FRANK RAY'S PALATIAL RESIDENCE TO THE LEFT AND THE POWER PLANT TO THE RIGHT.

CONDOR DAM WITH TABLE ROCKS IN THE BACKGROUND.

BY ARTHUR M. GEARY.

COLONEL FRANK RAY and his brother, Dr. Charles R. Ray, New York capitalists, who have spent a million dollars in establishing the power plant at Gold Ray, on the Rogue River, are not satisfied with using their electricity for power and light only, but are now planning to apply it direct to horticulture. The two enterprising brothers have offered the State Horticultural Department of Oregon the free use of 50 acres of fine irrigated Rogue River land upon which to establish an experiment station, along lines of investigation of the action of electricity upon plant life. Included in this offer is free water, electricity, necessary labor, horses and a well-furnished house. All that is required in return is a scientific man to superintend the investigations.

The people of Southern Oregon are very desirous of the installation of this plant, as experiments in other countries have shown electricity to be of practical value in increasing the productivity of plants.

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There are three ways in which electricity may be used in horticulture and agriculture. One way is to increase growth by electric lights at night; another way is to apply electricity directly to the plants, and still another use to which it may be put is gathering nitrates from the air.

The presence of an arc light near vegetation at night increases the luxuriancy and rapidity of its growth. For many years it has been noticed that plant life in the polar regions grows more rapidly and is hardier than that which exists in the temperate zone. This has been found to be due to the continuous light which shines upon those regions during the Summer months. Even at Gold Ray, which is lighted up at night by immense arc lights, this invigorating effect of light is clearly shown. The roses and lawn planted recently on the barren hillside have attained a luxuriant growth. A eucalyptus tree, which is not supposed to grow in this climate, set out only three years ago, has grown to the height of 21 feet.

It is very probable that before long many of the farmers will light their orchards at night by the use of arc lights, as electricity is cheap and the supply is inexhaustible. Now, during peak harvest, the picking crews through the valley are generally in the orchards before sunrise, waiting for it to become light enough to pick, as the pears become heated during the middle of the day and no picking can be done. After the pears ripen quickly, and a lighted orchard would mean hundreds of dollars to the large orchardists especially.

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In 1885 S. Lemstrong, a native of Finland, discovered that by applying electricity to vegetables and fruit trees their productivity was increased from 20 to 90 per cent. Also that the fruits and vegetables ripened as many as 35 days earlier and contained much more sugar than those which were not treated with electricity. He found that under the influence of the sun all the electrified plants gave off electricity and kept up a current.

Plants were electrified by placing the negative pole at the top and the positive pole at the bottom. The more practical and preferable way, however, seems to have been to charge the plants from the top by a network of wires. By applying this process five or six hours a day the vitality of the plant was increased wonderfully.

Just as electricity increases the circulation in animal life, so does it in plant life. When the circulation of a tree is good, it resists disease and frost, and assimilates more water, sugar and nutriments.

Since Lemstrong's experiments investigations have been carried on in Germany, England and other foreign countries with wonderful results.

"When, after some preliminary experiments at Bittin," writes Sir Oliver Lodge in the Electrical Review, "J. E. Newman, of Gloucester, determined to try the phenomenon on a really large scale and came to me to see if I could enable him to maintain a continuous high tension discharge for hours together each day over 10 or 11 acres by means of power furnished by an oil engine and dynamo, I very willingly assented and set my son Lionel Lodge upon the job.

"The method is to stretch over the field to be treated a number of wires on poles, high enough for loaded wagons and all the usual farming operations to go on underneath the wires, which are supported on the posts by elaborate high tension insulators and extend over all the acreage under experiment.

"The system of conductors is then connected at one post with a generator supplying positive electricity at a potential of something like 100,000 volts and with sufficient power to maintain a constant supply of electricity at this kind of potential.

"Leakage immediately begins and the charge fizzes off from the wires with a sound which is sometimes audible and with a glow which is visible in the dark. Any one walking about below the wires can sometimes feel the effect on the hair of the head as of a cobweb on the face.

"The electrification is maintained for some hours each day, but is shut off at night; it is probably only necessary to supply it during the early morning hours in Summer time and in Spring or in cold, cloudy weather for the whole day or during the time of the plant's greatest activity.

"At what stages of the growth of a plant the stimulus is most effective has still to be made out. However, in the case of wheat both the ear and the straw are valuable and the electrification is accordingly applied for a time each day during the whole period of growth until stooling begins.

"The power is generated by a two-horse oil engine driving a small dynamo in an outhouse on the farm. Thence the current (three amperes at 220 volts) is taken by ordinary overhead wires to the field, where they enter a suitable weathertight hut which contains the transforming and rectifying apparatus.

"In the experiments to be described there were about 19½ acres of ground. The wires were mounted on insulators placed upon larch poles some 15 feet high, which were placed in rows, being separated by a distance of 102 yards and the poles in a row being 71 yards apart.

"Stout telegraph wire carried the current down each row, while thin galvanized iron wires, placed some 12 yards apart, were stretched between the rows and acted as the discharge wires. In this way 22 poles were sufficient to support the wire over the 19 acres. Roughly, only one pole an acre is required, therefore the inconvenience is practically nil.

"Owing to the flexible suspension, risk of breakage to the wires is very small. During the two years the wires have been up at Bevington, apart from a few wires broken at harvest time by catching the top of an extra high wagonload, only one wire has fallen."

The United States Government has recently established an experiment station to investigate this use of electricity, but as yet no data have been sent out. By help of a state experiment station at Gold Ray, the whole fruit industry of Rogue River Valley might be revolutionized. Rogue River furnishes an almost inexhaustible means of generating cheap electricity. There is enough power at Gold Ray alone to generate 3000 horse-power.

Electricity as a means of gathering nitrogen from the air is broadly used, 30,000 horse-power being devoted to this purpose in Belgium. The apparatus employed is a high-voltage static machine, placed in a gas-tight room with a nitrogen receiver at the bottom. The machine throws sparks into the space filled with air, which breaks up the hydrogen and nitrogen molecules. The nitrogen in the form of nitric acid being the heavier, settles into the receiver on the bottom. Here it is generally absorbed by some chalky substance, which is later scattered over the land, renewing its fertility.

With an abundance of electricity-producing power at hand, the Ray brothers are anxious to provide means of monopolization of it and are ready to increase their power plants as the electricity is needed.

BOOKS

The Airship Boys, by H. L. Sayler. Illustrated. $1. The Reilly & Britton Co., Chicago, Ill.

It was only the other day that Louis Bleriot in his monoplane form of airship succeeded in flying from France to England at the average speed of 45 miles per hour, remaining 250 feet above the sea level, and the entire reading world interested in such events has not yet recovered from its gasp of astonishment. Boys have been specially interested in the feat, and at least one of the young generation has said within the past few days: "Paps, can you do that?"

Mr. Sayler is fortunate that his new book for boys appears at a time when the Bleriot incident is so fresh in the minds of us all. His story is stirring, and appeals to us all who like a rattling good adventure yarn, one about a voyage in a dirigible balloon in quest of buried treasures left by the Aztecs in New Mexico. What is told recalls much of the charm of Jules Verne, although Mr. Sayler sometimes tests our credulity when he asks us to believe that any boy here possessed such mechanical and scientific skill as that owned by Ned Napier. But what's the use of a hero if you can't make him do romantic, almost impossible things? So, there you are. Mr. Sayler is so plausible that the reader forgives him, and we can only hope that after reading "The Airship Boys" no Portland youth and his favorite chum will feel called upon to build an airship or dirigible balloon, and leave home and mother in a mad desire to emulate the said Ned Napier.

The hardened reading cynic usually grins at a boys' story of adventure, but "The Airship Boys" is out of the common. For one reason, it is plausible and has a certain amount of common-sense scientific basis. Its author is a Chicago newspaper man, and he is manager of the City Press Association, which supplies the Chicago newspapers with all kinds of local news, day and night. Two years ago he began the study of aeronautics, at a time when little scientific information as to aviation was at hand. Since then, the world has been astonished at the feats of Count Zeppelin with his 400-foot dirigible, and those of our own American Wrights. Two new features noted in Mr. Sayler's story are the introduction of liquefied hydrogen with which to reinflate the balloon bag, and the exchange of food in mid-air for an equal weight of sand ballast.

Major Baldwin Honeywell interests Ned Napier in a scheme to find one of the great treasure cities of Cibola, supposed to be in what was then Mexico, and famous as one of the historic places where the Incas hid their treasures when pressed too closely by the inquisitive Spanish. The Major wants built a dirigible balloon at a cost of $10,000, figuring that the amount of treasure brought back by the boy aviators would make a highly profitable investment. The Major knew Ned Napier as a daring aeronaut, and stated that the clue to the hidden treasure city of Tune Cha had been left by a Spanish explorer, Miguel Vasquez, who had probably marched out of Mexico in the year 1539 with Friar Marcos, the explorer. Would Ned cause such a dirigible balloon to be made, one capable of flying for a week over dreary wastes of sand and bidding defiance if need be to hostile Indians? Would a duck swim?

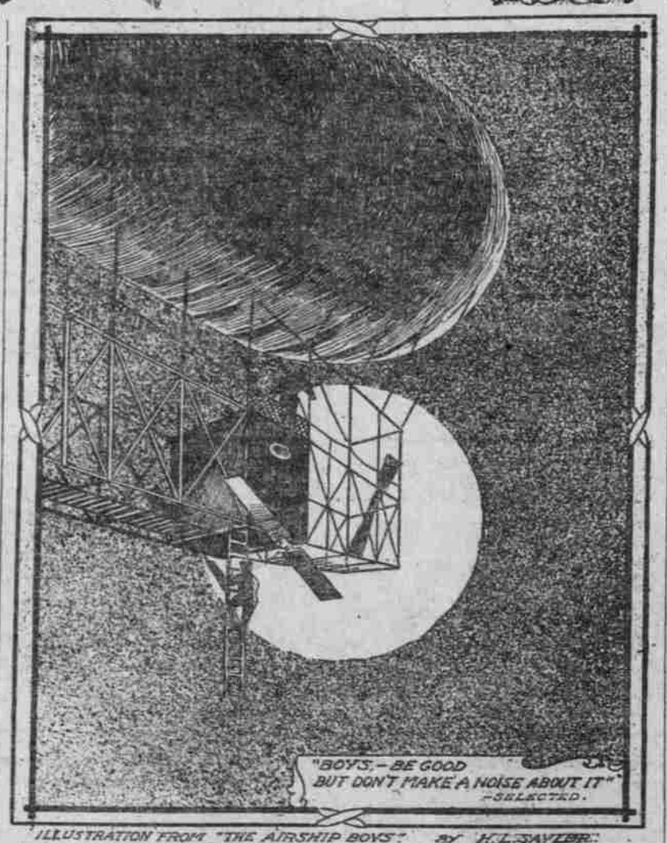

ILLUSTRATION FROM "THE AIRSHIP BOYS." BY H. L. SAYLER.

The cigar-like bag of the balloon used by the boys was 58.4 feet long, and it held over 65,000 feet of gas. The motor, propelled by gasoline, was of American make, and the engine had eight air-cooled cylinders, in two sets of four, placed at an angle of 90 degrees to each other. "The crank case was of aluminum and the shaft of vanadium steel, hollow, and specially treated to insure toughness. All the studs or bolts were of the same steel, and complete, with balance wheel, it weighed 200 pounds. The ignition was accomplished by six dry batteries and a single wire-vibrating coil. It was rated at 50 horsepower. The propeller, 11.48 feet in length, revolved in bearings four feet above the bottom of the car. The hood was of waterproof silk, coated with powdered aluminum, that metal being used because of its semi-incombustibility. The look-out windows on all four sides were covered with isinglass. The gasoline reservoir, just forward of the engine, was connected with the bridge by a corner supply pipe." And so on. I have quoted at this length in order to show the realistic basis on which the novelist works. The dirigible is called the "Cibola."

Of course, the boys meet with many perilous adventures, including one fierce fight with Western bad men who sought to learn what the explorers were seeking in the wild mountain region. Once, when the explorers were sailing near the region of Tune Cha to meet the advance guard of their party with needed supplies, they had a fight with Ute Indians. Ned speedily put the fighters to flight by throwing among them a cordite bomb, and then the boys met in mid-air the airship Arrow, of Los Angeles, Cal., and exchanged 50 pounds weight of sand for food. They found the lost treasure city, and came across an idol of silver weighing 300 pounds, and a quarter ton of treasure valued at $34,908.

Boys, how is that? But there's many a slip, etc., and having found the treasure the explorers discovered they couldn't bring all of it to civilization because of a curious adventure they had. However, the review had better stop at this point, in justice to the market value of the novel. Mr. Sayler evidently knows what boys like—boys with real blood in their veins—boys who are not molly-coddles.

Plays, by John Galsworthy. $1.35. G. P. Putnam's Sons, New York City, and The J. K. Gill Co., Portland.

No modern writer of fiction in England has a more devoted following than Mr. Galsworthy, at the present time. His message has a peculiar call. His style may lack the crisp, audacious epigrams of Bernard Shaw, and the dreary lives that Hall Caine is so fond of introducing—He rather suggests the delicate wit of Anthony Hope and the rural realism of Thomas Hardy. This latter feature was noticeable in Mr. Galsworthy's last novel, "The Country House."

Mr. Galsworthy has been unable to eliminate his fondness for the somber side of life in writing these plays: "The Silver Box," "Joy" and "Strife," but the picture has a certain compelling force. The best play of the three is the first-named, the plot of which busies itself about the larceny of a silver cigarette box from the home of J. Barthwick, member of the British Parliament, said home being Rockingham Gate, London, England. Mr. Galsworthy calls his play a "comedy," but the humor is not of the violent sort. Much of the action is carried along by Mrs. Jones, charwoman for the Barthwicks, and her loafing half-Socialistic husband, James Jones. Jack Barthwick, son of the magnate of that name, begins the comedy by coming home drunk one morning. Jones is passing at the time, absent temporarily from his libations at the "Goat and Bells," a saloon or rather public-house, as the English would call it, and in the fullness of his heart young Barthwick calls in the stranger to have a drink with him. Barthwick has playfully taken a young woman's purse containing a small quantity of money, and that money and a silver cigarette box are quietly annexed by Jones. The scene shifts to the miserably-furnished room occupied by the Joneses and their three children. Jones is lying in bed, half asleep, and when his wife says she hasn't enough money to pay the rent and that "they" will be coming for it today, her husband breaks out like this:

I've had enough o' this tryin' for work. Why should I go round and round after a job like a bloomin' squirrel in a cage? "Give us a job, sir." "Take a man on." "Got a wife and three children." "Sick of it I am. I'd sooner lie here and rot." "Jones, you come and join the demonstration; come and 'old a flag, and listen to the ruddy orators, and go 'ome as empty as you came." There's some that seems to like that—the sheep. When I go seekin' for a job now, and see the brutes lookin' me up an' down, it's like a thousand serpents in me. I'm not arskin' for any treat. A man wants to sweat hisself silly and not allowed—that's a rum start, ain't it? A man wants to sweat his soul out to keep the breath in him and ain't allowed—that's justice—that's freedom and all the rest of it. You're so milky mild, you don't know what goes on inside o' me. I'm done with the silly game. If they want me let them come for me. I'll lie and rot sooner than arsk 'em again. What makes you stand like that—you long-sufferin' image—that's why I can't keep my hands off you. Work. You can work, but you haven't got the spirit of a ——. The other day a lady down the street says to me: "D' ye want to earn a few pence, my man?" and gives me her dog to 'old outside a shop—fat as a butler, 'e was—tons o' meat had gone to the makin' of him. It did 'er good, it did, makin' 'er feel 'erself that charitable, but I see her lookin' at the copper standin' alongside 'o me, for fear I should make off with 'er bloomin' fat dog.

Mrs. Jones is arrested, charged with the larceny of the silver box, although her husband fights the arresting officer and insists that he, Jones, is the thief, and the scene is changed to a police-court, where the best descriptive work appears. Mrs. Jones is declared innocent of the larceny, and her husband is sent to jail but he audibly wonders why he is punished for the theft, while young Barthwick, who stole the contents of a young woman's purse, is not prosecuted.

"Joy" concerns the doings of Miss Joy Gwyn, who has a foolish mother. The latter doesn't live with her husband, and permits Maurice Lever, a promoter of fake mining companies, to make love to her. Mrs. Gwyn and Lever try to interest Colonel Hope to buy worthless mining stock, and the move is blocked by Joy, who knows that the venture will turn out unprofitable, and that the colonel hasn't much money to spare on such luxuries. Just fair.

"Strife" tells the story of a strike which has raged for some time among the employes of the Trenartha tin-plate works, and magnates, union men and the workmen affected, keep up the action. This drama is ordinary.

A Transferred Identity, by Charles D. Hudgins. 25 cents. J. S. Ogilvie Publishing Co., New York City.

Told within paper covers, this story deals with the problem whether or not Hans Dunderschnaffle's mental powers had really been injured permanently by a surgical operation on John McFarland's head. A lively tale for an idle hour.

JOSEPH M. QUENTIN.

GANG OF MURDERERS HELD

Lyons Police Have Worked Up Remarkable Case Against Thugs.

PARIS, Aug. 7.—(Special.)—The members of a murder gang, who for five years terrorized the department of the Ardeche, Isere, and the Drome, are being tried at the Valence Assizes. They are charged with no fewer than 25 crimes, including eight murders, involving the death of ten persons; and two attempted murders, not to speak of attacks on the highway and a number of thefts. One or other of the accused has confessed to the crimes attributed to the gang.

The band numbers five members. The chief is a criminal named David, who since his arrest has made several attempts to take his life. He confesses to killing a man named Meyer, and throwing the body into the Saint Martin Canal at Paris. The others accused are Liottard, Berruyer, Lamarque and Brenier, all but the last named being described as dangerous criminals.

It was a long time before the Lyons detectives caught the murderers. The police officers, disguised as quarrymen and woodmen, spent months exploring woods and quarries. A fortuitous circumstance led to the arrest of the assassins. As the result of a theft committed at Tournon, Liottard and Berruyer were arrested, and in the course of the subsequent inquiry denounced David and his wife.

When David was arrested, he, out of revenge, "blew the gaff," and confessed to crimes in which he had participated with Liottard, Berruyer and Lamarque. After an inquiry lasting months the exact part played by each of the ruffians was made known.

The Day of Day and Night

By Gilbert D. Nesbit

"Where is the way where light dwelleth? and as for Darkness, where is the place thereof?—Job xxxviii, 19.

An endless ride on a course worldwide
Is the race of Day and Night.
Day speeds ahead when the dawn is red,
On the path ablaze with light.
Across the seas, to awake the breeze,
And above the hill and glen
He sends his cries to the paling skies
Till they echo back again.

And the flecks of frost by his wheels are tossed
Where the Winter has its hold;
And he flings the dew to the rosehearth too,
Where the Summer morns unfold;
But he has no rest either East or West
For he must keep on his round
On the course that swirled all about the world
At the hour Time was unbound.

Over earth's broad rim, to the rear of him,
There arise the banners gray,
And there comes the beat of the muffled feet,
Telling Night is on the way.
Then the Night sweeps high in the fading sky,
With her trailing stars a-rush,
Till she holds the seas and the crooning breeze
In her calming, worldwide hush.

Yet the Night must look at the path Day took,
And must haste o'er plain and steep,
In her arms there gleams all the gold of dreams
And the silver seals of sleep.
And she flings them free over land and sea
To the host of day-worn men—
Then she hurries on at the shout of dawn,
For the Day is come again.

Thus they sweep and swerve up the long, long curve
That is laid from East to West;
And there is no stay on the reaching way—
Neither pause, nor halt, nor rest—
But the two rush on with the dark and dawn
On the path that lies before,
In the endless ride on the course worldwide
Until Time shall be no more.