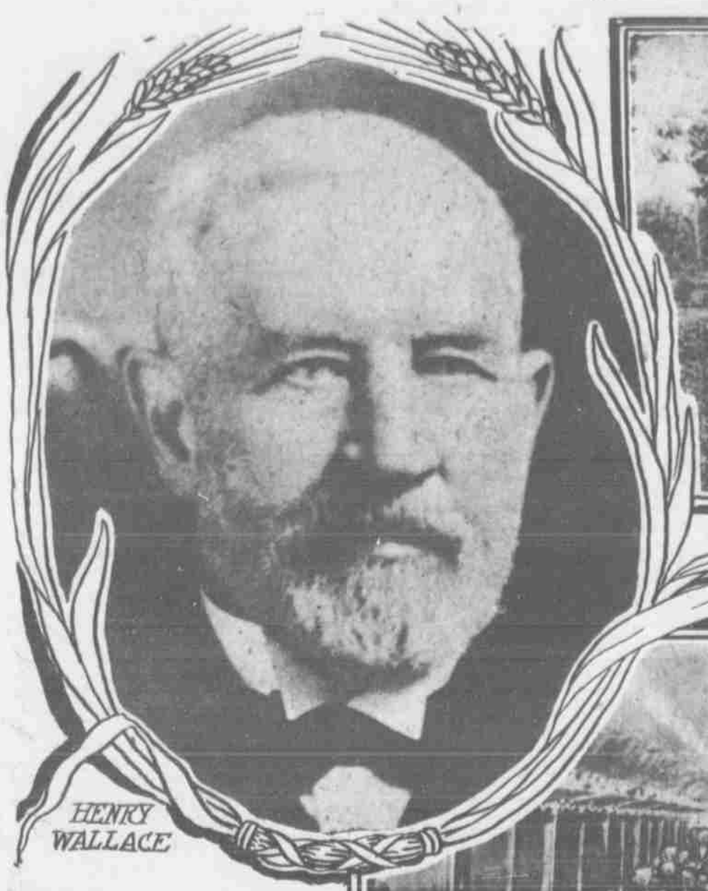
Soil Culture Experts Instruct Farmers in Modern Methods



HENRY WALLACE

MARSHALL COUNTY VISITORS AT STATE COLLEGE STUDYING SOIL EXPERIMENTS WITH W.H. STEVENSONS AS TEACHER.

PROF. P.G. HOLDEN SUPT. OF EXTENSION I.A.C.

INTERIOR OF LECTURE CAR

PROF. A.A. SNYDER IN CHARGE OF SOILS EXTENSION, I.A.C.

EDWARD H. HUNTER DES MOINES REPRESENTATIVE C.B.&Q.

PROF. W.H. STEVENSON SOILS, I.A.C.

G.E. STAYNER-SEC. AGR'L EXTENSION

W.H. STEWART - WASHINGTON, IOWA

M.A. HAUSER - LISCOMB, IOWA

SUCCESS in flattering measure has attended the trip of the Burlington railroad's Iowa Soils special, according to J. W. Johnson, who is traveling with the train. Mr. Johnson says that "in three days out from Des Moines fully 15,000 people have been aboard the cars in the various stops, or have been addressed in overflow meetings on depot platforms."

Starting from Indianola Monday morning, October 10, the train has stopped for twenty to thirty minutes at nine or ten towns each day. During this week it will follow a similar routine.

Mr. Johnson says the towns in southwest Iowa have produced crowds even greater than in any other section. The reputation of the "Soils special" and the men who are doing the lecturing has gone ahead of it everywhere. Experienced and observant practical farmers have found in the demonstrations presented and the pertinent facts brought out just the sort of instruction for which their minds have been hankering.

With the train on its trip through Iowa are Professors Stevenson, Snyder, Stewart and Houser of the Iowa Agricultural college. Speaking constantly, and on subjects of which they are masters, these experts have pleased the people immensely by their apt illustrations and easily understood instruction. Despite the generally conceded fertility of the soil of the state, even under the happenstance method of farming that has prevailed, they have brought home to their hearers the solid fact that this soil needs building up. They have specified exactly how its crop nutrients have been depleted, and have indicated plainly how it can be built up by wise treatment and easily applied methods of conservation.

The basic things, it has been pointed out, are rotation of crops, proper drainage, the use of native manures, which have been largely wasted, and the feeding of live stock on the farm instead of selling the grain to the elevator man. Professor Holden, at every opportunity, has impressed on the farmers and other visitors to the train that, next to educating the boys and girls of today, there is no question as important as this one of soil conservation and the application of business sense and business methods to the farm.

Mr. Johnson dwells on the fact that this most practical development of agricultural education has taken such a hold on the people of the places visited that high schools are dismissed when the train is due, all along the line of travel, and the young people are out to hear the discussions by the lecturers. He also asserts that the demand for such education as a steady thing is so strong it is a question of but a short time until the science of agriculture and domestic economy will be brought into the rural and town schools of Iowa. An interest has been created and an ambition has been aroused that will compel the school authorities to provide the trained teachers necessary to outline and apply the lessons now being roughly sketched by the men on the special train.

Taking Mr. Johnson's figures of attendance for the three first days as indicating the general interest in the enterprise put on wheels by the Burlington railroad, and it is readily found that in the two weeks the special will be out this time over 50,000 people will have inspected the exhibits in the car and had the benefit of the discussions of the scientists aboard. These men answer questions, too, and get right down to the meat of the real things their hearers desire to know about. Everybody is made welcome on the special, and all classes of the community are cordially invited to hear the talks.

The easy possibility of doubling the amount of crops now produced on the ordinary farm is forcibly brought home to the owners by Professor Stevenson. He goes into details in such a way that his presentment is bound to have a most beneficent effect on the work of the men who are willing to listen and learn. Conciseness of thought is made necessary by the brief time given to each stop, with the result that the talkers have cut out everything but the essentials of their topics.

Southern Iowa has what is known as a "gard pan" soil, with qualities peculiarly its own, and Prof. Stevenson has been devoting some of his time to presenting informing data touching this soil. He explains just what methods to adopt and what fertilizers to use in multiplying the crop yield, and then takes up the question of how to drain heavy, wet land and put it in prime condition for crop growing. That millions of acres of the upland prairie soil of southern Iowa needs drainage on a well digested plan is well known, and the scientists on the soils special give some attention to this problem. They hold this drainage of the uplands is fully as necessary as it is to drain the marsh lands of the northern section of the state; and they go further and enter into details of just how this drainage is to be brought about.

Proper rotation of crops, on any given kind of soil, to get the very best results is discussed with conscientious care by the lecturers. They explain the necessity for an abundant supply of nitrogen and humus in the soils where crops are to be raised, and in this connection proved fertilizers are told about, how much of each to use, and when. Production and care of fertilizer on the average farm is also gone into intelligently, and the sinfulness of waste of this very material product of the home farm is brought home to the crowds of farm owners and operatives.

Many a man, hearing these lectures and discussions with an open mind and ready to adopt what is proved good, will have occasion later on to say he had for years been farming, at least haphazard, if not entirely in the wrong way.

This traveling exhibition of modern railway enterprise, practically bringing useful and welcome education to the people of a large section of farming country, is put on wheels by the Burlington railroad at its own expense; and the interested public of fertilizers, drainage, and the kindred subjects touched on. They have mastered the science of agriculture and have applied their knowledge practically. They are not theorists, but workers and producers, who know the secret of making two blades of grass grow where but one grew before. They are doing a work which was undreamt of when man in middle life, now working farms, began their labors actively, as the heads of farm households; and results gained in recent years by the methods and means they advocate have fully justified their claims that farming, so far as crop production is concerned, is yet in its infancy.

Electrical Developments

Wireless Distance Record.

THE Marconi Wireless Telegraph company got word from its London station on the 4th inst. that Mr. Marconi, who is near Buenos Ayres, had received messages at that point from Glace Bay, N. S., and from Clifden, Ireland. These two points are about equidistant from Argentina, and it is estimated that the new record is about 5,000 miles.

The Marconi people say that this far exceeds their best previous record, reports the New York Sun. The United States battleship Tennessee more than a year ago picked up a message from San Francisco when the Tennessee was 4,360 miles away. In November, 1909, the Pacific Mail steamship Korea sent a message to the United Wireless station at San Francisco from a point at sea 2,300 miles to the westward and then repeated the performance when she had reached a point 4,720 miles west of San Francisco. The Marconi company believes that the messages received by Mr. Marconi in Argentina establish a new record.

Combination Locomotive.

A long, strange-looking locomotive with smokestack in the rear, cooler pipes in front, and the locomotive engineer and fireman in between, has just made its appearance in Glasgow, and has attracted widespread attention in railway circles. The steam is produced in its boiler, but instead of turning the driving wheels, it works a turbine which drives a dynamo, thus generating electricity for actuating the motors. The nominal power of the engine is equal to about 1,900 horse-power. The locomotive, not being dependent on live rail nor wires, can travel over any railway. It has been called the electric-turbo locomotive.

Not long ago Mr. Hugh Reid, in his presidential address to the Glasgow Engineering society, thus describes the steam turbine electric machine, which is otherwise spoken of as the Reid-Ramsay locomotive. Steam is generated in a boiler of the ordinary locomotive type, which is fitted with a superheater, coal and water being carried in side bunkers and tanks. Steam from the boiler is lead to a turbine of the impulse type, running at a speed of 3,000 revolutions per minute, to which is directly coupled a continuous current variable voltage dynamo. This dynamo supplies current and pressures varying from 200 to 600 volts to four series-wound traction motors, the armatures of which are on the four main or driving axles of the locomotive. The exhaust steam from the turbine is condensed and eventually flows into the hot well carried on the engine.

As the steam turbine requires no internal lubrication, the water of condensation is free from oil, and can be drawn from the hot well and forced into the boiler as required. The water exaporated by the boiler is therefore returned again to the boiler, and is practically simply the vehicle used in the cycle of change where the energy residing in the coal is made to do the work of turning the wheels and so moving the engine and train.

The condensation of the exhaust steam deprives the locomotive of the blast which stimulates the fire in ordinary locomotives. The forced draught is in this case provided by the use of a small turbine-driven fan. This fan is placed within the cooler which produces a circulation of air in the electric generators. The fan, therefore, draws cold air into the cooler and delivers warm air to the fire.

The whole locomotive is mounted on a strong underframe, and is carried on two eight-wheel compound trucks, so built as to curve easily. The machine is intended for express passenger main line work, and is really a traveling electric power house on wheels.

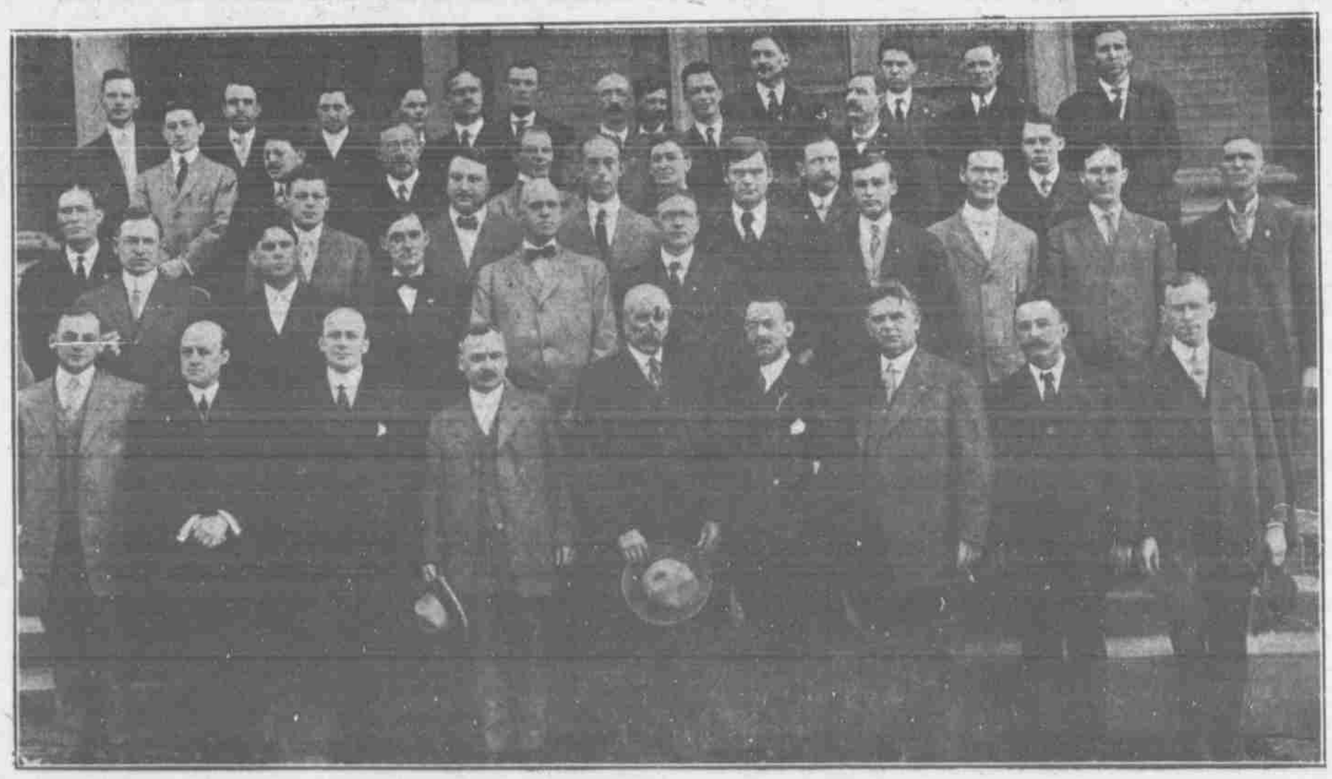
Electricity Aids Herd.

According to Prof. Silas Wentworth of Los Gatos, Cal., his experiments with electric influence on animal and vegetable life at his experimental farm on the Tyler place, near Roseville, during the past year, have proved that electricity will more than double the lamb crop and greatly increase the yield of wool. A band of 2,000 sheep was divided, one-half being placed in a field under the power wires of the Great Western Power company, while others were kept in a field away from the electric influence. In the field under the high potential electric power lines the production of lambs averaged a fraction over two lambs to each ewe. In the adjoining field, where the electrical influence was lacking, the lambs averaged less than one to each ewe. Similar differences were noted in the yield of wool from sheep in the different fields. Fleece from sheep in the electric-influenced field proved 20 per cent heavier.

Preparations are now being made to plow up both fields and plant wheat.

The power company will be asked to extend power lines throughout the entire Tyler field, that the influence of the electric current may be increased. Prof. Wentworth believes that the yield of wheat in the Tyler field will be over 100 per cent heavier than in the adjoining field.

Men Who Deal with Commercial Electricity



DELEGATES TO THE WESTERN ELECTRICAL INSPECTORS CONVENTION.

Arrangement of Lighting.

The increased interest now taken by the general public in illuminating engineering is perhaps due to the fact that it has come to be recognized that it is quite as important to arrange the position of lights wisely, and to equip them with proper shades and reflectors, as to buy the most efficient type of lamp. Yet many misconceptions and much confusion in the ideas of people on this subject are still prevalent. For example, the suggestion is not infrequently heard that electric light or some other system of illumination is bad for the eyes, whereas, probably, it is the misuse of the light, rather than the system employed, which is to blame.

One of the chief requirements for good illumination, says the Boston Transcript, is the avoidance of "glare." The light yielded by a source may be spread over a relatively large area, as in the case of the candle flame or the petroleum oil lamp, or it may be concentrated over a small space, as in the case of the newer metallic filament lamps or arc lamps. The dazzling effect of looking straight at such sources is due mainly to this concentration of light. Now, as has been pointed out by many of those interested in illumination, there has within the last few years been great progress as regards the efficiency of light production of illuminants. But this has been accomplished only by securing a corresponding increase in their brilliancy. Dr. Stockhausen of Dresden, for example, in a recent contribution to the Illuminating Engineering society, estimated the intrinsic brilliancy of a number of modern illuminants and the following figures are taken from his results and those of other authorities and printed in the London Times:

Illuminant.	Intrinsic Brilliancy.*
Candle	0.68
Petroleum lamp	0.98
Gas flame	0.75
Incandescent gas burner	5.06
Acetyline flame	6.23
Carbon filament glow lamp	86.5
Metallic filament glow lamp	219.5
Arc lamp	†3,000
Sun at zenith	†90,000

*In candles per sq. cm. †Approximate.

Many prominent engineers and oculists in different parts of the world agree that the exposure of these new brilliant sources within the field of view may be injurious to the eyes, and is in any case very inconvenient and troublesome. Everybody in fact is aware of the paralyzing effect of looking for a long period straight at a naked filament or incandescent mantle. The eye in attempting to adapt itself to such bright sources rapidly becomes fatigued; and light so used can be definitely said to be detrimental to eyesight besides being most wasteful in practice.

Men who use their eyes in writing through the day require specially perfect condition of illumination if their eyes are not to suffer. It is probable that in many cases a comparatively slight change in the position of the lamps and fixtures provided would not only yield a much more satisfactory illumination, but enable considerable economies to be made. It is obvious that as different buildings serve entirely different purposes the arrangement of the lighting will have to be specially designed in each case. In particular the amount of light required in each case will differ. Naturally the illumination of a book read by a child at school may be very different from that required in a railway yard or in a picture gallery or museum, in which objects are examined at some little distance. What is needed is to standardize, as far as possible, the conditions in different cases, and in order to do this proper apparatus and methods of measurement are essential.

Married in a Canoe.

Raymond C. Poettiger of the First National bank, and Miss Margaret C. Cobb, both of Wilkes-Barre, Pa., were married in the canoe in which they became acquainted. They went with the Rev. A. J. Kerr and two witnesses in the canoe to the spot where they had become engaged. There, standing in one canoe, with the minister and witnesses in another, they were made man and wife.