The Journal of ELECTRICAL WORKERS AND OPERATORS

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Vol. XXVI WASHINGTON, D. C., AUGUST, 1927 No. 8

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OFFICIAL ORGAN OF THE

INTERNATIONAL ELECTRICAL WORKERS AND OPERATORS

PUBLISHED MONTHLY

G. M. BUGNIAZET, *Editor*, Machinists' Building, Washington, D. C.

Contents

Magazine Chat

The photograph on the front cover is the work of Lewis W. Hine, a photographer, who has specialized in industrial subjects. His work has been published in the Survey Graphic and other periodicals, carrying insight into labor problems.

The intent of a photographer like Mr. Hine is not just "to take pictures," but to lift photography to the level of art, by revealing in the individual subject certain universal elements.

The frontispiece, and the two other etchings, dealing with Detroit, are the works of Anton Schutz. Mr. Schutz is perhaps the only successor to the late Joseph Pennell, America's foremost etcher. All his work catches the sweep, turmoil and majesty of American cities.

For the first time in this number the Journal has utilized the appeal of color. It was done to observe the biennial event, the convention—a proper time to celebrate the craft.

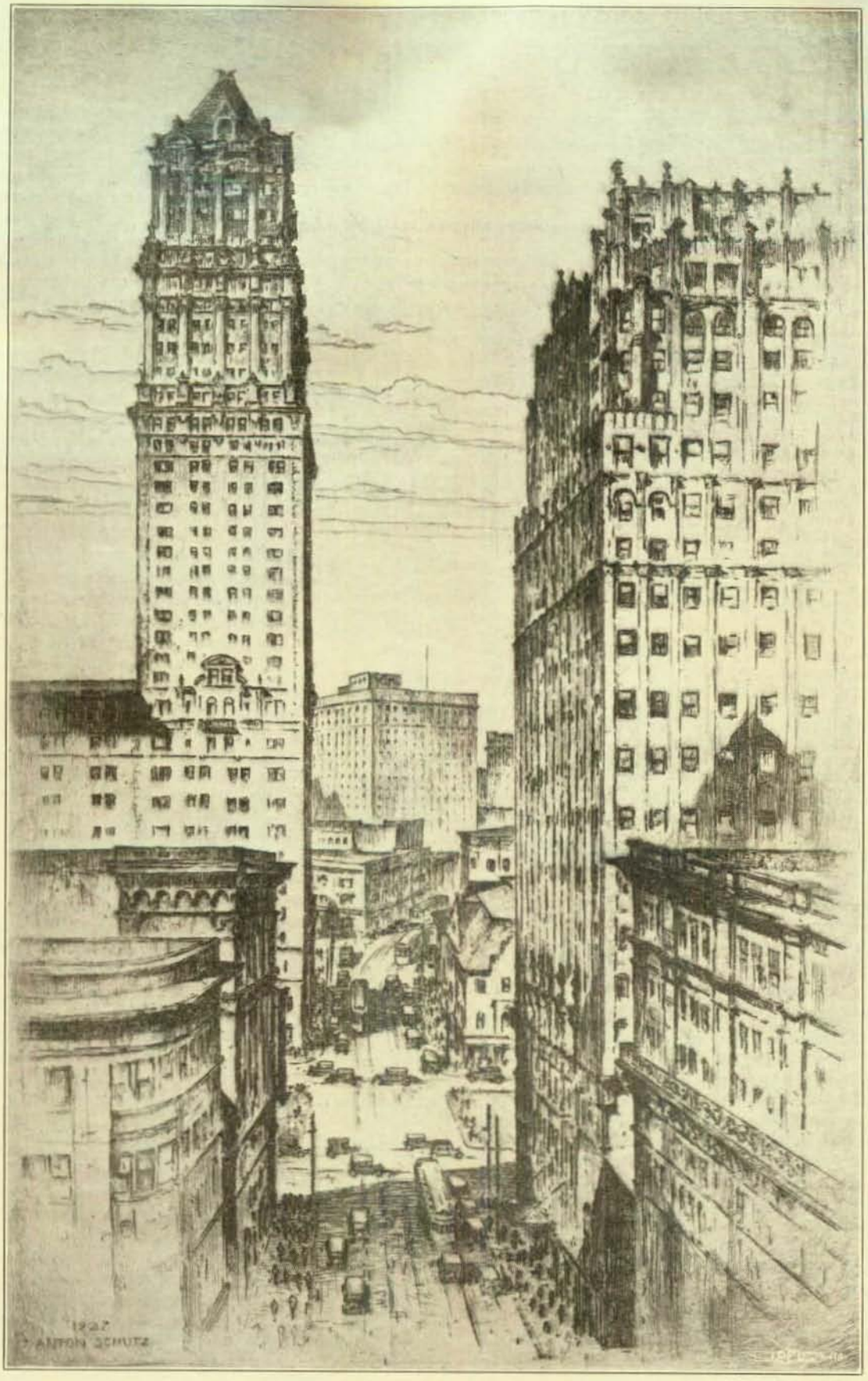
Color, like music, and all other beautiful things, a ship, an engine, a tree—makes irresistible appeal. You may try to shake off its witchery. Analyze and analyze, and there it is staring you in the face. You just can't help liking a color job, can you?

What may be the beginnings of a permanent history of the union, is begun in this number, in the stories of the union's early life by Newman and Bachie. Both of these jobs represent competent and intelligent work by our correspondents.

When you see your union, and its complex activities pass before your eyes as they do in this issue, you stare, and rub them in amazement. "What an important organization I belong to," you say.

I sometimes think that there is no end to the work of the union. 1927-1929 will see still bigger attainments.

Printed by National Publishing Co. 1222 H St. N. W., Washington, D. C.



Etching by Anton Schutz

BOOK TOWER, DETROIT, TOWERING 40 STORIES HIGH GIVES CONVENTION CITY DISTINCTION

THE JOURNAL OF
ELECTRICAL WORKERS & OPERATORS
Official Publication of the International Brotherhood of Electrical Workers
Entered at Washington, D. C., as Second Class Matter. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized March 28, 1922
SINGLE COPIES, 15 CENTS $1.00 PER YEAR, IN ADVANCE

Vol. XXVI WASHINGTON, D. C., AUGUST, 1927 No. 8

Vision of Brotherhood

By John Gray Mullen

I see men marching.

* * *

I see men marching in endless lines onward, ever onward, to the city of their inward dreams.

* * *

I see men falling out of line, discouraged, foot-sore, broken.

* * *

I see brother hands reached to them, tender, unashamed, helping hands.

* * *

I see marauders. I see traitors. I hear spiteful, calumnious tongues. I see spies, agents provocatuer, passing in and out of the ranks sowing rancour, bitterness and discord.

* * *

I see weaklings, cowards, misanthropes. I see work-worn, back-bending, heart-wrecked old men; I see upright, flushed, eager young men. I see women, proud and strengthful.

I see their lines—broken, scattered, by lies, force, calumny.

* * *

I see their ranks flung headlong over the wilderness, across dark muddy streams, dank swamps, into prison and detention camp.

* * *

I see disease, pain, death.

* * *

But I see—oh, strong men; I see the ranks reform—first a thin line, and then a row deep and strong, moving forward, slow, fast, uncertain, sure, hesitant, then purposeful.

* * *

And I see—oh, loyal men. I see the marchers going hand in hand, as brothers, onward, ever onward, to the city of their inmost dreams.

(Written for Convention Number, Electrical Workers' Journal)

Behind Wages and Hours Stands the Craft

IT is but natural that men outside a labor union see most vividly its economic aspects. In a period when wage earners are forced to battle for a foothold on that very wobbly raft called the American standard of living, so that the tools they use and the ideas they promulgate obscure other aspects of their common life equally if not more important; a labor union is something more than an economic unit. It is a society of craftsmen, knit together by the natural bonds that unite men engaged in similar labor, inspired by the same motives, developing a common technique and sharing gratefully an honorable tradition. It is not unlikely that craft consciousness is as powerful a cement as economic needs and aspirations. But, as we say, their craft bonds are not so conspicuous, being more private than public.

Craft pride is a legitimate and potent emotion. Probably there is as much genuine pride in their craft among electrical workers as among lawyers or architects. If you want to anger a real craftsman, call him a botcher or a dub, or require him to do work that is not up to his trade standards. If you want to win his lasting friendship, show him that you understand his pride in his work.

It is often pretended by anti-union propagandists that all a union exists for is the accomplishment of materialistic aims. But this is untrue. It is not unlikely that bad working conditions, which are in conflict with craft standards, produce as many strikes as low wages. The Constitution of the International Brotherhood of Electrical Workers lists ten objects of the union. Of this number four are designed primarily to advance craftsmanship:

1. To organize.
2. To establish an apprenticeship system. (Craft.)
3. To maintain a higher standard of skill. (Craft.)
4. To encourage the formation of schools of instruction in local unions for teaching the practical application of electricity, and for trade education generally. (Craft.)
5. To cultivate feelings of friendship among men of our craft. (Craft.)
6. To settle all disputes between employees and employers by arbitration, if possible.
7. To assist each other in sickness and distress.
8. To secure employment.
9. To reduce the hours of daily labor.
10. To elevate moral, intellectual and social conditions of our members.

What Is Craftsmanship?

Craftsmanship is a thing sensed a great deal, and analyzed but little. On the higher side, it is what a poet like Sandborg, a novelist like Dreiser, a pianist like Paderewski, a dramatist like Kapek, an architect like Burnham, an etcher like Pennell have. We call it skill. And the first and foremost aspect of this craftsmanship is a pleasurable or play satisfaction in doing the job. Rollin Smith, a member of the Brotherhood, describes this aspect of craftsmanship this way:

"We have noticed that children are happiest when playing and will work cheerfully and earnestly if a task is made play to them. A man is just a child that has grown a little older and wiser. To be a success in any line of endeavor he must choose the kind of work that is play to him. The job that drags and makes the day seem long is not play. Clock watching and 'eye service' will not bring success. Such work should be replaced by the kind of work into which one can put one's whole heart and soul.

"To succeed is not easy. One must have the vision of a dreamer and the willingness to work. But work that is play, coupled with the desire to study and the determination to stay with the problem until it is finished, will bring success. A stone wall of opposition may be encountered. For a time it will look as if there is no way to surmount it. By taking time and having patience a way can be found to do any difficult thing."

This rather abstract question yields other significant factors under analysis. Psychologists and industrialists working together find that skill in industry manifests itself thus:

(1) As reponsibility for a large number of decisions. This factor distinguishes skilled work from mere routine or mechanical labor.

(2) As knowledge about the capabilities of materials.

(3) As ability concerning apparently outside jobs, related but not necessarily connected with one's own work, for instance, the ability of inside wireman to understand something of outside man's work.

(4) As ability to transfer knowledge to another industry.

(5) As keenness of perception.

(6) As appreciation of the inter-relation of one's job with the jobs of others in the industry.

With the mechanization of industry, and the widespread use of mass production methods, the question of what skill is, and what is its value is to the fore. There is a difference of opinion—as is inevitable. That organ of Big Business, the Wall Street Journal, believes "that the skilled worker according to the union definition is largely a myth. We are no longer afraid of him," it adds. And then it goes on blissfully happy to point out "the man working to a machine putting bolt number 17 in Mr. Ford's buggy works, can be taught his job in a week."

Skill Not Gone

At the same time, Henry Ford denies that his factory methods have killed skill.

"It has been asserted that machine production kills the creative ability of the craftsman," Ford declares. "This is illogical and absurd. The intelligent craftsman not only finds much to admire in the competent parts of the machine he is operating but derives satisfaction from the perfection of the work it performs. He knows that it means better wages than those derived from the other methods and more leisure in which to indulge his creative faculties for his own pleasure and profit."

We suspect that leisure is the important conservator of craftsmanship in this case.

Electrical workers are aware of the skill involved in their job, if the Wall Street Journal is not. It takes four years to make a journeyman electrical worker. And so skilled is the trade, that the journeyman must learn his craft largely through doing. We have before us a chart prepared by the Federal Vocational Education Bureau. This chart, entitled "Estimated Proportion of Trade That Can Be Taught Inside of School Shop," assigns 15 per cent of the electrical workers' craft to theory, and 85 per cent to practice.

HAND OF LABOR

AUTHOR UNKNOWN

Hand of Labor, hand of might,
Be thou strong in things of right,
Master thou of crafts untold,
Driving them in heat and cold.
Working high and working low,
That the world may brighter grow;
Press, the loom, and traffic great,
Know the drive behind thy weight.

Hand of Labor, wide and fine,
Things of earth are mostly thine,
Mines of gold and fields of wheat,
Harbors deep where pennants greet,
Ships of war, canals and locks,
Roads of steel and bridges, docks,
Strain thy sinews day and night,
Be thou strong in things of right.

Mills and shops in clang and roar,
Foundry fires and molten ore,
Sullen mines and heaving seas,
Lands of rocks and timber, trees,
Cotton fields as white as snow,
Forges black 'mid flames aglow
Strain thy sinews day and night;
Be thou strong in things of right.

Hand of Labor, great thou art,
Be thou fair and bear thy part
Like big souls, sincere, intense;
Stoop not low to base offense,
Nor in heat forget that men,
Large and small, all kinds and ken,
Have their place and must remain
'Neath the sway of guiding brain.

Limiting Work-Week

Limiting the work-week for women does not cause reduction in their wages nor hinder their advancement, says a report of Miss Mary Anderson, director of the U. S. Women's Bureau, the result of an investigation as to the result of special laws regulating employment of women. Here is a summary of her findings:

In the employment of women in industries and in stores legislation limiting their hours of work to 48 and 50 hours weekly does not hinder their advancement. It reduces their hours, it also reduces the hours of men, it occasionally results in increases in the number of women employed, it does not close occupations to women to any appreciable extent, it does not decrease the number of women employed and it does not decrease wages.

—A thoroughly conclusive answer to arguments of members of the National Women's Party, who were so sure laws limiting hours of women workers would shut them out from desirable occupations or throw them out of jobs entirely!

Whenever labor, whether organized or not, seeks to better its condition, there are always plenty of people to shout of impending disaster. We think this report is rather a good augury for the success of the 40-hour week, labor's new goal. It couldn't possibly result in as much havoc as some employers would have us think.

Strikes for a 10-hour day in 1835 were greeted with howls and groans about "decreased production"—but do you think production has been decreasing very much since 1835?

Maybe one of the students in Professor Jansky's engineering classes pulled this bright one that tickled the funnybone of Clark, of 143, Harrisburg, Pa.

Professor: Can any person in this class tell me what steel wool is?

Brilliant one: Sure, steel wool is the shearings from hydraulic rams.

Notable Progress Achieved By Union In Two Years

WHEN the curtain rang down on the 18th biennial convention of the International Brotherhood of Electrical Workers, at Seattle two years ago, it looked as if the stage were set for gains all along the line. Yet it was also apparent to everyone that there is nothing certain in the life of a labor organization, and that that stage of progress was framed by a big "if." The future at Seattle is the past at Detroit, and it can be reported now that virtually all the hopes of the organization—and more—have been realized in the period since 1925. The list looks like this:

A substantial—better than average—gain in membership.

A general lift in wages.

A decided movement toward arbitration of industrial disputes, without loss of time by major strikes.

Successful resistance to the company union menace.

Retention of craft prestige within the industry.

A wider and keener interest in union education principally dealing with craft economics or business problems.

Satisfactory settlement of severe internal structural questions.

Growth of the union's insurance activities.

Continued expansion of the official publication.

Strengthening of morale all along the line.

The general average of gain in membership in the building trades is estimated at about 7 per cent. Our gain has been conservatively estimated 10 per cent. This is healthy growth.

Wages Rise on Price Fall

At the same time, there has been a steady climb in wages—even real wages—that is, our wage increases have arrived on a falling price level. Steady increases have been due to a number of causes. First, to organization. Second, to an aggressive policy. Third, to adoption of sane, intelligent methods of negotiation, resting the case on facts, and knowledge of economics and the problems of the industry. Fourth, the respected position taken by the National Council on Industrial Relations. Fifth, the wide-spread acceptance of labor's contention that high wages are a factor in good times.

Within this two year period, it may be said, the National Council on Industrial Relations has generally established itself. Its methods of conference have been pretty widely commended and copied. The Council has provided a peaceful, common sense way of settling disputes on the basis of research, and as Brother Ford shows in his article, has tended to stabilize conditions, wages and hours.

Two years ago, there was still doubt in some quarters as to whether company unions were a blessing or a menace. Today that doubt has faded. They have been shown for what they are; puppet organizations bought and paid for by employers. In our industry, two large sections are still moving on the welter of such false organization, but there are signs that all is not well in Zion.

Machines are making no great inroads in the building trades. Skill is still needed and demanded. In those directions, where machines are being introduced, they are making no appreciable inroads on union morale.

A flexible organization, and a liberal policy has enabled the union to adjust itself to the new conditions. Still that the machine presents a condition in which company unions, or even open shoppery may take root is evident.

Education Chief Interest

In the last analysis, all union problems are problems of education—there are no other, that is, if it is assumed that men will act upon the knowledge they acquire. Then why this special stress on workers' education, and the general interest in the collective problems of the union, and the industry?

It began in case of the electrical workers with the power conference held at Brookwood last year. For years previous the union had also been active in organizing apprentice unions in certain of the large cities. Education was never a stranger to electrical workers. Hence it was but a step to aid in the more specialized education of the present.

The question is asked now and then, "What is workers' education?" or "Is there such a thing as workers' education?"

Answers might appear, if we look at the forces which brought so-called workers' education into being.

Workers' education arrived, first, because a great section of the population saw great sectors of human knowledge improperly stressed and presented by the established schools. More strictly speaking, these sectors were the social sciences and economics.

Workers' education arrived, second, because a great section of the population saw itself neglected by the established schools. In particular this section is comprised of the adult working population.

Workers' education arrived, third, because a great section of the population saw the small managerial group in industry secure a corner on technical knowledge important to that industry.

Workers' education arrived, fourth, because real culture has always been knit up fibre by fibre with the life of the masses, and there is no way under heaven to obstruct the hunger of men for knowledge that will enlarge their lives.

Within the last two years, then, electrical workers have seen the stable growth of workers' education in America and Canada.

The period since the last convention has been significant by a marked change in the direction and internal organization of one of the union's large locals. The unfavorable side of the affair in Local No. 3 has been stressed, but the constructive aspect must not be left to go unnoticed. It is not unlikely that the reorganization of Local 3 under the impact of modern ideas and aims will leave a lasting mark on the construction industry in New York City, the metropolis of the nation.

Elsewhere in this number the growth of the union insurance activities, and the expansion of the official publication are told.

There is continued indication that the morale of the organization is good, and that foundations are being laid for sane, substantial and steady progress.

THE BOOMER'S LAST

By D. J. BACH (BACHIE), L. U. 210-211

Beside a western water tank,
One cold November day,
Inside a battered box car
A dying lineman lay.

His old pal stood beside him
With low and drooping head,
Listening to his last words
As the dying lineman said:

"I am going to a better land,
Where everything is bright—
Where Mulligans grow on bushes
And you camp out every night.

"You do not hit the sticks at all
And never change your socks,
While streams of good old alcohol
Come trickling down the rocks.

"Tell my old girl back in Muncie
That I've crossed the Great Divide,
And say she's not to grieve for me,
For I've taken my last ride.

"She's not to cry, nor should she wail,
When she learns of my kick-out,
As I've drifted o'er a better trail
Than the Gila-Monster Route.

"Hark! I hear the high-ball—
I must glom 'er on the fly;
Another drink of red-eye,
One more before I die."

The Boomer had dead-ended—
He had sung his last refrain;
His old pal copped his Kleins and hooks
And grabbed the eastbound train.

(With due apologies to the author of "The Dying Hobo," and "de"-composed, without permission, by three devoted worshippers at the shrine of Bacchus, one alcoholic, summer's day in a certain little town in Indiana—1916 B. P.)

Stars Move in Swarms

That virtually all of the stars move through space in clusters, like flying flocks of birds, is the conclusion announced by Professor Frank Schlesinger, head of the astronomical observatory at Yale University, in a lecture just published by the Royal Astronomical Society, of London. The stars of the sky are called "fixed" because in one man's lifetime they do not seem to move from their accustomed places. But if these same stars could be watched for millions of years, or even if they are watched for a few years with powerful telescopes by which the exact place of each star can be measured, it appears that they do move very slightly. These movements are called by astronomers their "proper motions." Some thousands of these proper motions have been measured more or less accurately and Professor Schlesinger has been long a specialist in their study. He finds that many groups of stars, not necessarily very close to each other in the sky, have almost the same proper motions, indicating that all are moving through space together. The stars are as far apart, in proportion, as two or three mosquitoes flying about inside the largest convention hall in the world. All the visible stars might be represented by a few thousand mosquitoes flying over the United States. Professor Schlesinger's idea is that the visible stars belong to a relatively small number of separate clusters or star-swarms, the stars of each swarm moving in the same direction and at the same speed. Our sun probably belongs to one of the swarms.

Brave Old Days of Boomer Made to Relive

By D. C. BACH (Bachie), L. U. 210-211, Atlantic City

WHEN the sun shines on both sides of the fence at once, the old Boomer becomes restless, smokes incessantly, and wonders how tricks are out in 'Frisco or back in Philly and what the old mob is doing up in Chi. The desire to see what is over the hill is too strong to resist and—bing! he is down in the yards and grabs the first thing out of town, regardless of destination. Perhaps it is only a craving to match wits and cunning with some hostile train crew, but whatever it may be, he has answered that irresistible call of the road and is happy again.

The other day a tall, gray-haired gentleman, having all the earmarks of wealth and refinement, stopped me and said, "Pardon me, friend, would you assist me in replenishing the innerman as I have met with misfortune and have not eaten for thirty hours?" As I kicked in I thought of the old main-stem regular who usually prefaced the touch with "Hey, bo! I just dropped off the guts of a rattler. Will yuh stake us to a feed?" Both meant the same, but what a difference in their technique!

From that little incident the ghosts of yesteryear arose to haunt and taunt me with their thousand-mile shirts, hay-wire jobs, and a host of other fond recollections.

Ghosts Hover the Air About

I could hear the familiar greeting of the flag or shack: "Well, bo, where yuh goin' an' wot chu ridin' on?" When they were in rare good humor a paid-up card would suffice, but more often it meant a shakedown of from four bits to two bucks a division, and if the tourist didn't loosen up it was a case of hit the grit. Several times have I stood in the rain, watching the rear lights of the observation car or perhaps the caboose fading out in the distance, and heartily cussed the dough-hungry parasite who ditched me.

In spite of such inconveniences there is a thrill in riding a good "hot-shot" or decorating the deck of a limited, and if the latter's crew gets too tough there is always a provision box beneath the diner in which to hide. The dimensions are not much smaller than an upper berth, and no porter to tip in the morning.

A rainy night is no time to carry the banner, so the Boomer makes for an inside flop: perhaps it is a hay-mow or some dinky country can, a lime kiln or maybe a kindly stinger's shanty. In the larger towns he hits the drag until he has the price of a bed in some crummy flop-house—and what hungry, juicy crumbs they are, with legs on both sides!

My Master's Boudoir, Yeh, Bo!

In the morning he meanders down to the jungles, the rendezvous of the Knights of the Road, that is to be found on the outskirts of most any town from coast to coast. There the aristocracy and flotsam gather to wash up, cook up, and at times boil up. In fact, the jungles compare favorably with an open-air apartment consisting of boudoir, kitchen and bath, with running water. Yeah, a creek usually flows within.

Around the fire is sprawled a motley gang of yegs and gay-cats, white-liners, stewbums and blanket-stiffs, with occasionally a college grad who muffed the ball back home, while others are there through love of adventure and some through adversity.

When the larder is low a detail is sent out to forage for the eats. The countryside is given a fine-tooth combing and woe be unto the farmer whose hennery or spring-house are unlocked. The corn fields and spud hills are raided along with tomato vines, and for dessert the watermelon, canteloupe and strawberry patches are cleaned; so within a short time a mulligan is on the fire.

The small-town storekeeper has his troubles, as the jungle-eer never passes him by. He mooches the punk here, a hunk of meat there and the java somewhere else until he has the makings of a feed, inclusive of salt, sugar and perhaps butter. When the shopkeeper's back is turned the moocher swipes anything that isn't nailed down, thereby making it hard for the next hungry bozo, who may be a square-shooter down on his luck.

Judges Say 90 Days for You

Afterwards the pots and pans are scoured in accordance with the unwritten law of the jungles, "Never leave a dirty kitchen." The makin's or an old butt are produced and the topics of the day, from the latest Wall Street deal to the burning of Seattle Slim in San Quentin, are thoroughly discussed. The chinfest naturally drifts to news of the road and then you will learn that the chow is punk along the Sow-Belly Route and that things are on the bum in Kay See; that John Law is tough in Bakersfield, and about the El Paso judge who knows nothing but 90 days.

Another tells how easy it is to ride the Lake Shore, but watch out for High-Pockets, the shine dick in the Galesburg yards. If the alky has been flowing freely you may even hear this bit of doggerel:

"I never was in Truckee,
And I'll tell you the reason why:
A bull glommed me in Reno
For a trick I turned in Chi."

Last but not least is the guy who in parting says: "Well, so long, fellas; if you ever blow in Logansport look up Tony the Wop and tell him the Swinging Door Kid sent yuh. Tony is jake and will fix you up." All of which is the bunk as the probabilities are the Wop exists only in the mind of the speaker, who pulled that crack for effect.

While some real tramp may say: "Adios, old sport; when you hit Camden, N. J., drop around to see Johnny

(Continued on page 445)

FIRST MEETING HALL, LOCAL NO. 1, 1891, 305 OLIVE ST. (BLDG. WITH FIRE ESCAPES.)

Struggling Youth of Union Vividly Sketched

By M. A. NEWMAN, L. U. No. 1, St. Louis

THE pioneer records of Local No. 1 are practically extinct, and were it not for the interest and memory of one or two, these records would be in their tombs, lost to the knowledge of our ranks.

The "facts" following will be described in minute detail. No stone has been left unturned to gather them and record them for future reference.

Our story carries us back to the days when one would point to a man and whisper, "he is an electrician." Today we are accepted merely as a matter of course, having lost our prestige as super-learned craftsmen. The first scene is in the early "nineties" with St. Louis the stage, and the players will be mentioned as we wander along.

In the spring of 1889 the first electrical union was organized as a lodge. This lodge was known as the United Order of Linemen, but did not amount to much and soon passed out of existence.

In the fall of 1890 the St. Louis Exposition decided to make electricity the leading feature and employed a number of electrical workers (among them a man named Henry Miller, who later played an important role) to wire the booths, displays and decorations in the Exposition Building.

The question of organizing a union was discussed during one noon hour, which finally led to calling a meeting at Stolle Hall, 1309 Biddle Street, later the meeting hall for Local No. 5221.

The organizer of the American Federation of Labor, Mr. Charles Cassel, cigarmaker by trade, was called in, and he arranged for a charter and completed the organization. This charter was granted September 20, 1890, and was known as Wiremen's and Linemen's Local No. 5221, A. F. of L., with the following officers: John Pearson, president; Frank Lockman, vice president; Fred Schantz, recording secretary, and James Ross, financial secretary. Some of the other brothers were M. A. Walsh, Cal. Provost, J. T. Kelly, C. J. Sutter, Jack McMannus and John Hisserich. At the election in January, 1891, Henry Miller was elected president and J. T. Kelly vice president, the other officers being re-elected.

Need of National Seen

Henry Miller was a tireless worker, and repeatedly told the members at each meeting that unless there was a national organization of electrical workers they could never hope to accomplish much, and that any advantage gained by an isolated union could not be permanent. Finally, at Brother Miller's suggestion, a committee was elected early in 1891 to agitate the question of a national organization. The committee consisted of Henry Miller, William Martyne, Joseph Berlovitz, Dave Guinea, William Hedden, James Dorsey, and J. T. Kelly, secretary. The committee prepared a circular which was mailed to electrical workers in every city in the country. Brother Martyne (the wandering Jew) furnished the greater part of the addresses to which circulars were sent. Other members of the committee had also "floated" a little and with information received from other members of the union the committee was soon in communication with all the principal cities.

The result did not satisfy Brother Miller,

DELEGATES TO THE FIRST CONVENTION OF THE INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS, AT ST. LOUIS, MO., NOVEMBER 21ST TO 28TH, 1891

Reading left to right, top row—J. T. Kelly, E. C. Hartung, Wm. Headen, Chas. Sutter. Middle row—Joe Berlowitz, Henry Miller, Stub Helzelman, Tom Finnell. Bottom row—Harry Fisher, James Dorsey

HENRY MILLER

LATER WAS FIRST GRAND PRESIDENT OF N. B. OF E. W.

Born January 5, 1858—Fredericksburg, Gillespie County, Texas.
Died July 10, 1896—Washington, D. C.

and he decided to take a trip at his own expense. He visited Evansville, Louisville, Indianapolis, Chicago and Milwaukee and organized a union in each city. Unions were also organized in Toledo, New Orleans, Pittsburgh, Cincinnati, Philadelphia and Duluth.

There was also a union of wiremen in New York, and the United Order of Linemen had a few lodges on the Pacific Coast. The latter organization became composed entirely of linemen organized on the principle of secret societies, was not affiliated with labor organizations and did not last long.

In September, 1891, the St. Louis Union issued a call for a convention to meet there November 21. Chicago sent T. J. Finnell; Toledo, F. J. Heizelman; Indianapolis, E. C. Hartung, and Evansville, Harry Fisher. St. Louis was represented by Henry Miller, J. T. Kelly and William Hedden. Three other unions requested members of the St. Louis Union to represent them by proxy, and C. J. Sutter, Joseph Berlovitz and James Dorsey were added to the list of delegates, making ten in all.

Some of these delegates have continued as active members to the present. Some have answered to the final roll call. Some have gone into business, namely, J. T. Kelly and C. J. Sutter. Some have fallen by the wayside.

The convention remained in session one week and prepared a constitution, ritual, and all other things that go with an organization. It was agreed that only corncob pipes could be smoked during the convention, and it would be hard to find a jollier or more enthusiastic bunch than the one that met in that room near Twenty-eighth and Franklin Avenue and organized the National Brotherhood of Electrical Workers. On the last day of the convention the following officers were elected: Henry Miller, grand president; E. C. Hartung, first grand vice president; F. J. Heizelman, second grand vice president; T. J. Finnell, third grand vice president and grand organizer, and J. T. Kelly, grand secretary and treasurer.

Started on Good Will

When the convention adjourned, Grand President Miller was authorized to go on the road organizing. He volunteered to do this, as there were no funds available. The only money the Brotherhood had was $100, loaned by the St. Louis Union. Brother Miller, after receiving a small part of this, hit the trail. As for the general office, J. T. Kelly was busy having organization literature printed and charter and seals engraved. He borrowed money on building association stock that he happened to have and started the machinery generating.

After the convention the National Brotherhood of Electrical Workers established headquarters on November 21, 1891, in the Emilie Building located at 904 Olive Street, opposite the old Pope Theater, which later became the Century Theater.

The photograph, page 411 is a reproduction of Vol. 1, No. 1, of the first "WORKER" ever published, the writer having the complete volume in his possession. How's that, Bachie?

Henry Miller writes the following in the first WORKER.

"Now that the press secretary is a regular officer, let us hope that each union will select the right man for the right place. The press secretary is the local representative of the ELECTRICAL WORKER, and should furnish the paper with all the latest electrical news in his vicinity; also the condition of trade, new work, extension of plants, etc. We should aid our grand secretary-treasurer in every way we can to make the ELECTRICAL WORKER a success, both educationally and financially. You can aid him financially by getting subscribers and advertisements, and educationally by sending from time to time an article on some practical subject."

(Editor's note: Good advice then, and today.)

MR. AND MRS. J. T. KELLY

In 1892, an electrical journal was brought to light and was published in January, 1893. Below is the official statement of the publica ion.

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OFFICIAL JOURNAL OF THE
National Brotherhood Electrical Workers.
PUBLISHED MONTHLY.

J. T. KELLY, SEC'Y & TREAS.,
PUBLISHER.
904 Olive St., St. Louis, Mo.

SUBSCRIPTION, $1.00 PER YEAR IN ADVANCE.

St. Louis, Mo., February, 1893.

Under "Personal" in the April WORKER, 1893, the following was quoted:

"John Sutter, who has been custodian of the funds of No. 1 since the union was first organized, has gone into business, having formed a partnership with John Hisserich, under the name of Sutter & Hisserich."

"Michael A. Walsh was married to Miss Mary E. Halloran April 26. Brother Walsh is one of the best known men in the Brotherhood, a general favorite with all, and has the hearty congratulations of his numerous friends."

(Brother "Mike" A. Walsh is still in Local No. 1 and is the same old "Mike.")

M. A. Walsh and John Hisserich represented Local No. 1 at the Chicago convention in 1892.

Mrs. Kelly assisted Mr. Kelly in his new undertaking, and many old members will remember having seen her at most all conventions. Both are still living and both have our well wishes.

Mr. J. T. Kelly holds working card No. 15.

The St. Louis Union was the first to apply for a charter and was granted No. 1 November 28, 1891.

The first officers of Local No. 1 were as follows: J. T. Kelly, president; M. A. Walsh, recording secretary; John Hisserich, financial secretary; C. J. Sutter, treasurer.

Good Work Spread Fast

Milwaukee received charter No. 2, which later was granted to St. Louis Linemen; Birmingham, No. 3; New Orleans, No. 4; Nashville, No. 5; Memphis, No. 6; Louisville, No. 7; Toledo, No. 8; Chica-

go, No. 9; Indianapolis, No. 10; Terre Haute, No. 11; Evansville, No. 12; Cincinnati, No. 13 and No. 14; Columbus, No. 15; Cleveland, No. 16; Detroit, No. 17; Kansas City, No. 18, and Pittsburgh, No. 19.

Brother Miller carried on his organizing campaign throughout the East, and during the next two years Local No. 1 prospered, having over 200 members in the fall of 1893.

The St. Louis Union about convention time moved to 305 Olive Street and continued there till about 1895, when they moved to Lightstone's Hall at Eleventh and Franklin Streets. This hall was famous as the headquarters for Building Trades Council meetings. Bar was run by Andy Reed, whom many old-timers will remember.

C. E. White and Joseph McCarthy represented Local No. 1 at the Cleveland convention in November, 1893. In the fall of 1893 the inside men withdrew and organized Union No. 64 as a strictly wiremen's union.

Shall I Ask the Brave Soldier?

Union No. 64 moved its meeting place to Eighth and Franklin Avenues. John Casey was its first president.

The history of the next two years is one of disaster, not caused by soulless trusts, but by internal dissension, that bane of labor organizations. No. 1, in the very zenith of prosperity, with nearly every lineman, troubleman, inspector, telephone wireman and foreman in the city in the union, and in a position to secure shorter hours and higher wages for the members, went to pieces. Why?

Shall I ask the brave soldier who fights at my side
In the cause of mankind, if our creeds agree?
Shall I give up my friend I have valued and tried,
If he kneels not before the same altar with me?

These lines from Moore suggest the answer, and the same cause broke up many other unions. This was a sad experience, purchased at a high price, and we hope will never be forgotten by the electrical workers of St. Louis.

No. 64 did not have a very successful career. The years 1893-4-5 were years of panic and there was not much building going on. There was no building trades council, and the members of No. 64 were there from principle, and for a time after the dissolution of No. 1, were the sole representatives of the Brotherhood in St. Louis, the last year meeting in Lightstone's Hall at Eleventh and Franklin Avenue.

On August 7, 1895, a mass meeting of electrical workers was called, No. 1 was reorganized and No. 64 consolidated with it. No. 1 continued as a mixed union until October, 1897, when the linemen pulled out and started Union No. 2.

No. 1 signed an agreement with the St. Louis Electrical Exchange on June 1, 1897, which unionized all inside work in St. Louis. This put the inside men in control of No. 1, and as the greater part of the meetings was taken up in discussing questions that did not directly concern the linemen, they began to drop out, and it was thought best by both wiremen and linemen that they should separate, and Local No. 2 was organized in October, 1897.

It was just about this time, in 1897, at the Detroit convention, that the question arose, due to Canada's participation, to change the name of the Brotherhood from National to International. This question was submitted to referendum and was adopted in 1899.

At the Detroit convention a man from Rochester, N. Y., was elected grand secretary, and he moved the National Brotherhood headquarters to Rochester, N. Y.

In 1897 the first business agent was elected to Local No. 1, Brother William Koeneman having that honor. Those following him were George Edison, W. R. Lewis, Patrick Coughlin and C. G. Williams. This is the list up to 1901.

Many other good business agents have followed C. G. Williams, as: James McGinn, A. M. Bradford, Jack Farrel and A. Schading, the present incumbent. The constructive work done by Patrick Coughlin will long be gratefully remembered by the members of No. 1.

No. 1 continued to prosper and on June 1, 1898, asked for 37½ cents an hour. This was refused and a strike followed, and at the end of five weeks the Electrical Exchange gave in and signed a three-year agreement. This agreement expired July 1, and the union entered into a third agreement—45 cents per hour from July 1, 1901, to May 1, 1902, and 50 cents per hour from May 1, 1902, to July 1, 1904.

No. 1 was represented at the Washington convention by Charles Dougherty, and at the Pittsburgh convention by S. M. Keeble and J. T. Kelly.

The following is a list of the presidents of the St. Louis Locals from 1891 to 1901 in the order they served: John Pearson, Henry Miller, J. T. Kelly, M. A. Walsh, Daniel Lafferty, John Hisserich, F. P. Kinsley, B. E. Tate, M. D. Callahan, Charles DeMar, M. L. Durkin, L. H. Daggett, J. W. Schaffer, George Edison, N. J. Roth, C. W. Campbell, O. T. Sweet and George D. Buck. Following George D. Buck were such men as Jack Farrel and James F. Casey, the present president, who has held that office since 1915 except one term.

From here we go into some of the later scenes, which take us to the present day of Local No. 1.

In 1903 the St. Louis World's Fair loomed up and brought many electrical workers to St. Louis, which finally resulted in a strike which lasted during the summer of 1903. The Salt Lake convention in September, 1903, voted $1,000 to assist the strike. The strike was settled during this convention and the money was returned intact. The settlement was for $5 per eight-hour day. Under this settlement our ranks made in excess of $100 per week. On November 1, thirty days before the close of the fair, the contractors closed their shops to force a reduction in wages to $4 per day, which was the scale provided under original agreement and which they were justified in doing. This lockout lasted seven months, most of them winter months, and cost Local No. 1 many a dollar. During these months No. 1 compelled daily attendance at the hall of all strikers, and part of the time paid strike benefits of 15 cents a day—5 cents for soup and 10 cents for carfare.

STOLLE HALL, ST. LOUIS, BIRTHPLACE INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS, 1891

Later, close to fifty members seceded from No. 1, organized under a state charter and went back to work to carry out the original agreement.

Finally the strike was settled by a movement sponsored by "Jim" Black, a wonderfully fair man and a nationally known builder. The strike was very costly, and about the first labor difficulty No. 1 had that did not turn out to be a clean-cut victory. The local at the close of the strike still met in Lightstone's Hall.

In 1905 Local No. 1 moved to the southeast corner of Seventeenth and Washington Streets. In 1909 it moved to Painters' District Council Hall at 2651 Locust Street.

The Reid-Murphy split, 1908 to 1914, caused two locals of No. 1 to be here during the years 1911 to

(Continued on p. 446)

Detroit Convention, 30 Years Ago, Sets Contrast

IN 1897—in November, 1897—30 years ago—the fifth biennial convention of the Brotherhood assembled in Detroit. No other national convention of the Brotherhood since that early meeting of a generation ago has been held in Detroit until this year. Thirty years have brought changes—not only in the outward form of the organization, but in the range and complexity of its interests and activities. The Brotherhood then was the National Brotherhood of Electrical Workers. Today the official title attests its international character, and Canadian locals are acting as hosts with the Detroit locals at the present convention. No better way of observing the onward march of our organization, perhaps, than to republish the message of the grand president of that first Detroit convention.

President's Message to the Detroit Convention of 1897

"To the officers and delegates in convention assembled, I submit the following report:

"I will be as brief as possible, as the grand secretary's and grand treasurer's reports cover the ground in regard to the financial condition.

"Two years have passed and gone since our last convention. In that time, we have had our good and bad fortune. Like all labor organizations, we have not made the progress that we should have liked, but we have had the satisfaction of knowing that we have held our own against great odds. The business depression that has been upon us a greater part of that time has been a great handicap in increasing our membership. The hum of machinery had ceased; the industries of our great country lay dead and dormant. Men were only too eager to find employment at any price, and with these conditions staring us in the face, we thought that sending out permanent organizers would be a useless expenditure of money — money that we needed to pay the widow and the orphan. But we hope for better times, and with better times there will come more money to the general office, and we can use some of this money to build up our organization.

"I am pleased with the showing we have made in the last two years. At the close of our last convention we were $1,016 in debt, and at this time our books show $1,483.97 on the right side. These figures speak for themselves, and should convince all the intelligent members of the Brotherhood that we are on the gain.

"The report from our grand treasurer also shows that we have paid out large sums to the widow and the orphan. Homes made sad and desolate by death have been cheered to a certain extent by our insurance system. Homes made sad over the death of the husband or son, who had died and left no other insurance, have been greatly comforted by our Brotherhood.

"Reports read at previous conventions have also shown some loss caused by dissatisfaction in our ranks. Unfortunately with us, like all other organizations, we have some few members whom it is hard to satisfy and instead of putting their shoulders to the wheel and helping to build up, they seem to take great delight in tearing down what others have worked hard to build. Men who are constantly looking at the dark side of life, and fail to see the great bounties that a good and gracious God has given us all. Unfortunately for all organizations there are always a few dissatisfied men who have a certain following. That perhaps has done us some little harm. Men who look at everything from a local standpoint and seem to think that as long as the local they belong to is in a fair financial condition, they care naught for the general standing of the Brotherhood. I would like to impress upon the minds of the delegates the importance of a national feeling—that the concern of one be the concern of all.

"There is another class of members that has caused some little dissension in our ranks. That is the dishonest man; men, who have gained the confidence of their fellow men, who have honored them with some very important office, after a fair trial have been found to be dishonest. I cannot find words to express my hatred and disgust for this class of men.

"I would suggest to all locals of the N. B. E. W. to bond their treasurers. While we may not doubt the honesty of anyone, it is business; and no honest man will object to business done in a legitimate manner. Many a poor fellow who had gone wrong might have been saved had he been bonded. The temptation would not have been so strong for him to steal money from his fellow craftsmen.

"Another pleasing feature with us in the last two years has been the few strikes we have had to contend with, and our success at this time can be attributed to that cause. As the workingmen become more enlightened they realize that strikes are disastrous and they are constantly crying them down. The good intelligence has reigned supreme, and mastered that radical element who are ever ready to do anything that may cause some little excitement. I will take it upon myself to make this suggestion: When trouble arises in a city, the local men should endeavor to settle the matter, and not send for a grand officer at the very start, thereby putting the Brotherhood to an unnecessary expense. The local members of the union know the local conditions better than a grand officer, and should try to settle before sending for a grand officer.

"Hoping that the convention will end harmoniously, I remain,

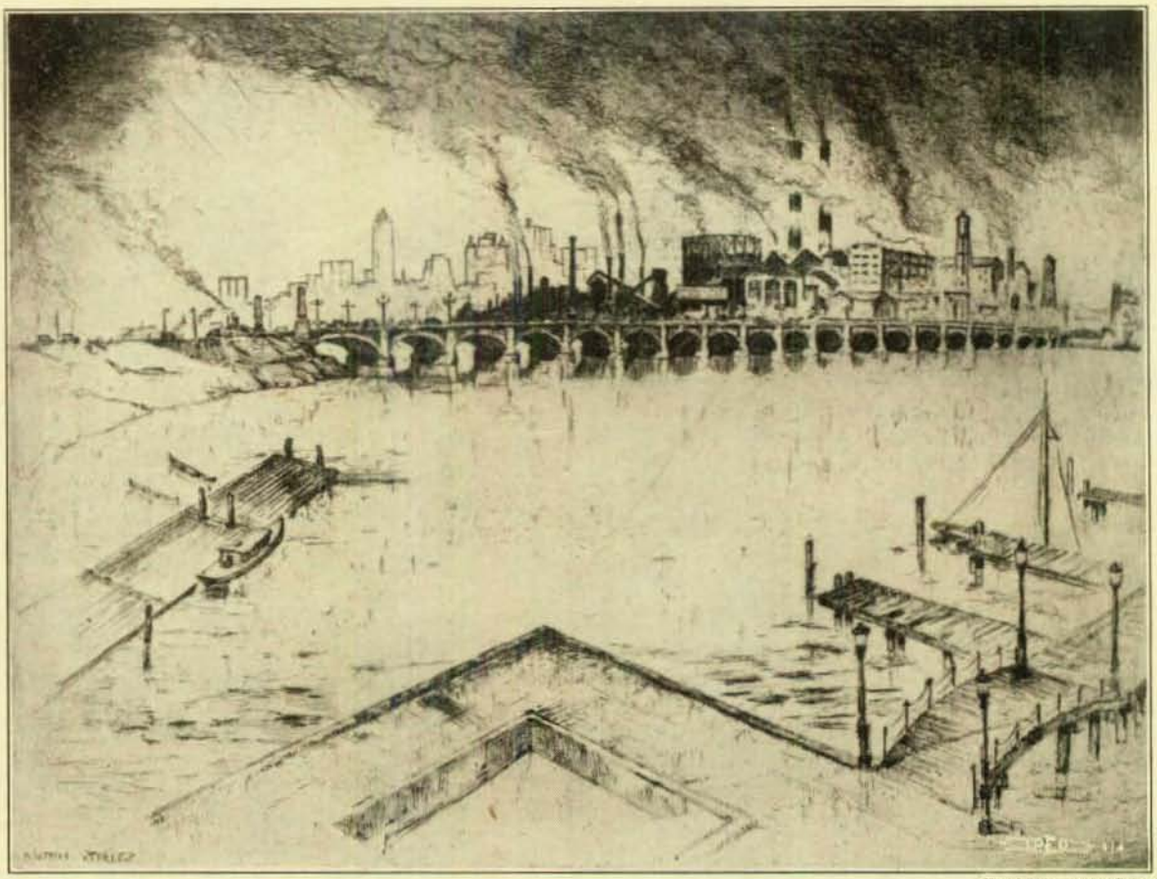
"Yours fraternally,

"H. W. SHERMAN,

"Grand President."

At the same convention Samuel Gompers, president of the A. F. of L., sent the following plea for support of the eight-hour day:

(Continued on page 448)



Etching by Anton Schutz

TITANESQUE ENERGY OF AUTOMOBILE METROPOLIS TYPIFIED BY INDUSTRIAL SCENE ACROSS BELLE ISLE BRIDGE

Dynamic Detroit Hospitable to Electricians

ALL eyes turn on Detroit, not only because of its dynamic life and unparalleled growth but because it has been marked out by organized labor for the greatest organization effort of a generation.

It is true that Detroit harbors a large, aggressive group of open shop employers. The Merchants and Manufacturers Association, the Metal Trades Association, and the Detroit Chamber of Commerce have given repeated evidences that they are organized to abolish the inalienable rights of life, liberty, and happiness for thousands of workers. One has merely to recall the church episode during the last American Federation of Labor Convention in Detroit to understand the blind and stupid force of the open shoppers.

On the other hand, Detroit's unorganized automobile industry must not be allowed to obscure the union movement in Detroit. Detroit as a city has behind it a liberal tradition such as few American cities possess. For instance, electrical workers in Detroit are well organized, enjoy good wages and good conditions, and play an important part in the civic life of the city.

Let's glance at the background of Detroit.

One day a generation ago a man was travelling to Johnstown, Pa., where a broken dam had let loose a flood of water on an unsuspecting people. This man was a Cleveland street railway magnate with business interests overflowing to Toledo, and to Detroit. On this particular journey, this big business man was reading a book by Henry George, "Progress and Poverty." Devastation wrought by the flood touched his emotions, while Henry George's economic work sharpened his insight into social conditions. He—this big business man—became converted to a liberal political philosophy which had far-reaching effects.

Began Wide-Spread Reforms

This man was Tom L. Johnson, probably the most vigorous and important political figure of that period 1898-1905. Tom L. Johnson not only set up a liberal regime as mayor of Cleveland, he reached over to Detroit and touched into dynamic activity Hazen S. Pingree. He converted Pingree to public spirited service. Pingree became mayor of Detroit in 1889. He at once set out upon his brave contests with the growing and corrupt public utility interests of the city. His brief but brilliant success finally led to public ownership of Detroit's street railways a few years ago. The liberal tradition of Pingree was continued in later years by such men as Couzens, now Senator Couzens.

A city that has such an honorable municipal past should be a place where workers can organize in unions, and build for the future. That they can has been demonstrated by electrical workers.

The population of Detroit is set at 1,400,000 persons. Its growth has outstripped that of any city in the United States. Building construction in 1925, was nearly 10 times what it was in 1910. In 1917, there were 58,000 automobiles in Detroit; in 1926, 360,000. Detroit is a city on wheels, and its 15 most used streets carry four per cent more vehicles than do the 15 most congested streets of New York.

Detroit is rapidly developing an aeroplane industry. It has five active airports today. It is ambitious for a sky-line like that of New York's, for it is building a tower 85 stories high, the tallest yet projected. It has a symphony orchestra; a repertory theatre; art galleries and a city plan for a splendid and orderly city development.

Began With Industrial Aim

If one looks back to 1701, when Cadillac founded the small fort in the Detroit River, which later grew into the city, one is amazed at the wonders that can be brought in 225 years. Cadillac was sent by the French Government to head off the British fur traders who were stealing France's trade with the Indians. Thus Detroit was founded out of an economic motive for a purely industrial purpose. It continued to expand until the nineties when the first practical motor car was invented. That meant acceleration of growth. For a long time Detroit struggled with Indianapolis and Toledo for automobile leadership, and won.

Detroit's industrial life began with saw mills, iron furnaces and copper smelting works. These faded away. "The decadence of the iron industry occurred during a period of transition when charcoal iron was giving place to coke iron and when wrought iron was being superseded by mild steel. While the forests lasted to supply charcoal, Detroit produced charcoal, pig iron and wrought iron profitably and promised to become one of the centres of the iron and steel industry. When it became necessary to import coke from Pennsylvania and to abandon the old reverberating furnaces for Bessemer Connecters or open hearth furnaces, the outlook for a time was so uncertain that the iron manufacturers of the Detroit district hesitated about making new ventures of capital on a far larger scale—and lost an opportunity.

Later coking coal from West Virginia revived this industry. Other early manufacturing interests included railway cars and parlor organs. Present noteworthy products are seeds, medical supplies, varnish and paints, and stoves.

Detroit is as well known in foreign lands today as New York or Chicago. To be sure, that reputation is somewhat tainted by the fact that the machine philosophy of the automobile magnates has been allowed to grind the workers. If Detroit would open its hospitable doors to all unions, its capacity for development would be unlimited, and its happiness immense.

Etching by Anton Schutz

HEART OF DETROIT WHERE MICHIGAN AND WOODWARD AVENUES CROSS

The road through Purgatory is long and it takes one to Paris.—*Ramsay MacDonald.*

Flappers are chaste little hell-cats with muddy minds.—*Cora Harris.*

JOURNAL OF
ELECTRICAL WORKERS
Official Publication International Brotherhood of Electrical Workers

Devoted to the Cause of Organized Labor

VOL. XXVI Washington, D. C., August, 1927 No. 8

Our Convention Opens The Convention of the International Brotherhood is assembled this month in Detroit. This gives the organization opportunity to greet its brother unions everywhere, to extend best wishes to the labor movement in all states and all lands, and to take stock of itself and its destiny.

As the representatives of our union go into session, it is evident as it was two, four, six years ago, as it was a generation ago, that labor has discovered a new way of life; a way of life, where mutual helpfulness voluntarily offered, is substituted for the code of the fang and the claw.

As this number of the JOURNAL attests, the Convention is being held as a climax of two years of advancement and accomplishment. These gains have not come automatically, but have been wrested from difficult circumstances by the magic of organization.

Our deliberations here, and our policies formed will be guided by the needs of the organization.

The future holds both advancement and reverses. If it did not, this wouldn't be life. The ancient foes of unionism are more powerfully organized and more heavily financed than ever before. It is possible that the next two years will bring a lessening of business activity with attendant inconvenience and suffering by the workers. The growing use of machinery, the steady application of mass production, the elimination of skill, in some industries the rise of company unions are all facts that must be considered. But in the period to come, however thorny the way, as in the past, the union will carry on, sustained and guided by the principle of mutual helpfulness.

Green's Ringing Ultimatum The ringing response of President Green to the president of the Interborough Rapid Transit Company, New York City, will hearten every trade unionist:

"As a citizen of the United States I have profound respect for our form of government and for its institutions," says President Green. "I have respect for law and for the administration of justice. It is not my purpose nor my intention, at any time, to violate any law or to act in a disrespectful way toward the institutions of government or the instrumentalities through which government functions. At the same time I have confidence in the integrity, the fairness and justice of our democratic institutions. I do not believe our courts will sustain any corporation or its officers in the perpetration of an illegal act. For this very good reason your threat to involve me in contempt proceedings will not swerve me in the least from discharging my duty as President of the American Federation of Labor or from pursuing a course which I know to be morally and legally right."

President Hadley of the Interborough mistakes the temper of American labor if he thinks he can frighten off organization in his company-unionized industry by threats of court action.

Turn to the Right Ever since organized labor entered upon a career of banking it has been watched with curious eyes by the entire world. Here was something new under the sun: wage-earners investing their own funds. Bankers and certain economists got a good deal of satisfaction out of calling labor unions capitalists; and extremists wrung their hands and whimpered that organized labor had sold its birthright for a mess of pottage.

It was but natural that there was doubt as to what direction labor banking would take. It now seems certain that that doubt has been dispelled. From the decision reached by the Locomotive Engineers, it seems determined that organized labor will stay out of the speculative field. The field of labor banking will be confined to handling the union's funds for slow and sure returns to the organization.

Mellon for President From time to time in these columns we have pointed out the trend of events. We have not shouted, "Wolf, wolf" where we knew only a sheep masked in the dreadful-appearing character. We have never assumed the role of a wild-eyed agitator, starting at our own shadow, and shouting at every pitch and toss of the Ship of State; or the role of cynic, who did not care what happened to the underlying population. Rather we have watched with critical but unafraid eyes the course of events in America, with the conviction that whatever happened we—the workers—had a right to know what was taking place. Too long the men, who make money out of running the show, have assumed new positions of power, and set in action a chain of events, the significance of which has not always been clear. Now we want to know.

On July 11, William Randolph Hearst, a multimillionaire publisher, from his private yacht on the Atlantic, nominated for President two candidates, to lead each of two old parties. The Republican was Andrew W. Mellon, present Secretary of the Treasury, the fifth or sixth richest man in the world; and the Democrat was Senator Reed of Missouri. Incidentally, this marks the beginning of the deflation of the Coolidge third-term balloon.

Mellon for President! When in the history of this country has any powerful editor ever had the nerve before to libel democracy thus? In the first place, Mellon does not even belong to the new school of rich men, with its tinge of liberalism; he is past 70 years old; is cold, and ruthless,

using business methods learned in the grab-and-crush school. In the second place, Mellon hails from Pennsylvania, where he is Boss Mellon, and where Republican politics are tainted with the Vare scandal. In the third place, Mellon has no democratic experience or inclination. He is a financier purely and simply, and by conviction an imperialist.

It is this man that Hearst wants us to accept for President. Let us say in passing that this completes the final stage in the slow decay and death of the Hearst brand of liberalism.

The trend then, is to exchange the puppet of a plutocracy in the White House for the plutocrat himself.

"Greenish Leprosy" While American marines were dropping bombs upon Sandino's troops in Nicaragua, a Nicaraguan representative to the Pan American Labor Congress, was denouncing American imperialism as a "greenish leprosy." President Green, voicing the will of the Congress, sent vigorous protest to the U. S. State Department against such violation of a nation's sovereignty. The Scripps-Howard newspapers denounced the Sandino affair as "the most colossal blunder Washington statesmanship has been guilty of in 100 years." And Senator George thundered invective against American policies, and deplored the fact that Sandino's defeat was a virtual massacre of human beings bearing primitive weapons, by modern engines of warfare, Yet this latest war, unauthorized by Congress, still goes on in Nicaragua.

Americans are witnessing the inevitable consequences of armed intervention. To pretend that armed intervention is a preservative of peace is to play fast and loose with truth. Armed intervention is an inevitable provoker of war. When Kellogg sent marines to Nicaragua he gathered together the materials and the flame for a war conflagration.

Congress, we hope, when it convenes, will not act supinely in this matter. More than the particular case of Nicaragua is involved. The constitutional rights of Congress are also very deeply and intimately concerned.

Movie Actors and the Unions Equity, official organ of the actors' union, has this to say about conditions in the movie industry:

"The patience and consideration shown by Equity to the players in the motion picture field have been rewarded. For eight long years Equity preached the need of a strong organization of motion picture actors and actresses. It spent thousands of dollars and a great deal of effort to bring that truth home to the screen people.

"For the most part that effort received discouragingly little response. Because abuses were not so widespread, or so galling, the majority of the actors in the films could not see where Equity was necessary to them. They felt that the producers were their friends, knew their problems and could be trusted. They would have none of Equity.

"And yet for all that apathy Equity maintained an organization in the motion picture field, and fighting very much of a lone battle did win something for the extra players; and did defeat certain bills presented to the California State Legislature which would have handicapped the motion picture players in their work. And still the screen players could not see where Equity would be necessary for their welfare.

"Early last month the Council, aware of impending developments which had come to a head with the formation of the Academy of Motion Picture Arts and Sciences, instructed the Executive Secretary to visit the Pacific Coast and to report at first hand.

"Upon his arrival, about the middle of June, Mr. Gillmore was cordially received but found a veritable tidal wave of sentiment favorable to the Academy and its organizers. Less than ever were the motion picture people inclined to listen to Equity's argument for an actors' organization.

"Three days later practically every motion picture actor and actress were confronted with a demand to accept a pay cut ranging from 10 to 30 per cent of their salary.

"Even the holders of long-term contracts were approached and were informed that: 'We know that you are loyal to the business and to this particular firm and we want you to accept a cut in your salary. You understand, of course, that we have an organization and that we stick together and that a man who fails to help us will get no work in other studios.'

"Then the motion picture actors and actresses realized that they needed an organization devoted to their interests, and that Equity was there ready to serve them. There were no recriminations, no arguing over past failures. Equity was there, and Equity helped.

"Due very largely to that help the slash in salaries has been officially deferred until the first of August, and may not be pressed then.

"But the motion picture players now know they need Equity. A great meeting of 800 players, held on July 6, voted without one dissenting voice to demand a Basic Agreement, a Standard Minimum Contract and Equity Shop from the motion picture producers.

"Three short weeks had cured the blindness of eight years, and Equity's patience had been rewarded."

Degrading the Presidency When we first saw movies showing President Coolidge in his cowboy suit, we thought "Somebody should slip around to the publicity man in charge of the South Dakota expedition, and tip him off that he had overplayed his hand." When we heard theater crowds titter at the President of the United States, we felt regret, pain, chagrin, and then, we were informed that some theaters had ordered the film cut so that the President of the United States would be saved—even in celluloid—the mortification of being tittered at.

But do not doubt that the South Dakota expedition is anything but what it is, a well-staged show, presented by crude stage managers, to build up a "new Coolidge" in the public mind. It is an effort to cash in on the old romantic West, and the Roosevelt glamor of other days. It's a mighty cheap performance, but when, pray tell, have political press agents been anything but shooters of cheap bunk and hot air?

The soberer problems of state are left for secret parleys of big business men.

Calendar of Electrical Days Since Last Convention

IN the midst of today's problems let's pause a moment and think back to two years ago when the electrical workers were assembling in Seattle. What do we see? Mainly we see that giant revolutionist—electrical power—under the guidance of man's intellect, and with the help of man's machines and the discovery and subjugation of natural laws, rapidly transforming the life we daily live. So insistent is this force we call electricity in modifying our lives that we accept the innovations as commonplace events. It is significant that all the great advances of science since 1925 have been in two fields, electricity and chemistry, and both are transforming industry. It is impossible to record all the electrical discoveries, improvements and inventions made even in so short a time as two years, but we had a great deal of pleasure surveying the lists, and we want you to share it.

Transmission

Great advances were made in the art of transmission. We use transmission here in the broad sense, rather than in the narrow, not referring merely to transmitting of electrical power. The first achievement which comes to mind, however, is the work of Frank G. Baum, of the Westinghouse Company. By Baum's invention electrical power can now be transmitted thousands of miles from distant waterfalls to distant farms. It virtually clinches the scientific conquest of interconnection, and makes the dream of a nation-wide, closely connected electrical system a fact.

The next achievement which at once comes to mind is television. It floors the imagination with its possibilities. A king is crowned in India. We may live to sit at home and view the ceremony flashed on a plain white screen in our living room. The writer saw a demonstration of television at Washington, D. C., this spring. It left nothing to be desired. A girl sat at a telephone three rooms away and spoke to you in the ordinary way through the transmitter and you beheld in a glass plate below every changing expression of eyes and face, as though she were before you animate. Dr. Ernest F. W. Alexanderson is credited with the invention of the television device.

The Scotch inventor, Baird, has perfected a device whereby the "eye" of television's instrument can see in the dark.

Since last the electrical workers were assembled, New York, Philadelphia, Washington and even Los Angeles have been linked with London by a common telephone. Without the aid of wires voices float back and forth across the Atlantic.

Through the operation of a new invention known as the regenerator, which insures practically automatic working of a cable system of telegraphy, the speed between London and Gibraltar has been increased 35 per cent. By this device London has cabled Cape Town, Africa, in less than a minute.

Radio pictures have become a realization in the two years intervening between conventions.

Manufacture

The General Electric Corporation has issued a booklet recounting the advances made in 1926. These are varied and interesting. The most important of these to electrical workers, perhaps, is the provision of automatic station equipment for the control of larger hydro-electric units.

The General Electric Company produced a turbine of 77,000 k.w. capacity during the past year. During 1927 the same company will install a unit of 91,500 k.w. capacity, in 1928 a unit of 94,000 k.w. capacity, and in 1929 a unit of 208,000 k.w. capacity. This latter unit is designed for the State Line station near Hammond, Ind. It will operate under a steam pressure of 600 pounds and a temperature of 750 degrees. The unit will consist of three elements, all operating at 1,800 r. p. m. The high pressure will drive a 76,000 k.w. main generator and each low pressure turbine will drive a 62,000 k.w. main generator and a 4,000 k.w. service generator. The main generators are to be wound for 18,000 volts.

In marine equipment, the tendency to adopt electric drive throughout for all auxiliary service as well as for propulsion was evidenced by the construction of a self-unloading bulk freighter and dredges of the suction and dipper type, each of the three craft being the largest and most powerful of its type. Improved auxiliaries included new deck winches, automatic mooring winch and an automatic towing machine.

In the electric railway field, there was an increased adoption of the lightweight type of car for both city and suburban service. There was also renewed activity in the electrification of the main lines of steam railroads and numerous additions to their rolling stock and power distribution equipment. Corresponding progress was made in further extending the use of the oil-electric locomotive, the gas-electric motor car and the gas-electric bus. More powerful substations were provided with automatic control and a number of them were equipped with the steel tank type of mercury arc rectifier. Certain new types of motors were designed and the benefits resulting from improved methods in the quantity production of certain types were shared with the industry through the medium of reduced prices. Numerous new types of motor-control apparatus were provided to meet special operating conditions, and the system of motor control by means of the field control of the generator was successfully applied for the first time in the operation of ore and lift bridges, coal car dumpers and similar heavy material handling equipment.

The high frequency furnace was utilized commercially for the first time in the melting of ferrous metals, and electric welding was applied to an increasing extent and for larger work in manufacturing processes. Electric heating was adopted by industries which previously depended on fuel, and there was a continuation of the active development in electric refrigeration apparatus.

In addition to the advances made in the railway field, automatic station equipment was provided for the control of larger hydro-electric units and its use in mining and industrial substations was greatly extended. Supplementing its service in communication, carrier current was utilized for the distance control of substations through the operation of carrier current selector supervisory equipment.

Paralleling the increase in the capacity of the generating units, the maximum capacity of both self-cooled and artificially cooled transformers

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THE EXPOSITION BUILDING. — The Exposition and Music Hall Building is the largest and grandest ever used for exposition purposes in the United States, excepting those of the Centennial. It occupies the very central location, bounded by Olive, St. Charles, Thirteenth and Fourteenth streets. It is on the old site of Missouri Park, which occupied six and one-fourth acres. The dimensions are 506 ft. in length by 332 ft. in width, and contains 280,000 feet of space. The building was erected at a cost of $750,000, and in the incredibly short time of one year.

Exposition, Olive, Thirteenth, Fourteenth and St. Charles.

The first Exposition was opened September 3rd, 1884, by a grand street pageant of the Trades Association, grandly illuminated streets, and other appropriate ceremonies. The most successful expositions in attendance and financially have been those given at St. Louis. The building is an elegant and imposing structure, of which no cut seems to do it justice. It is built of brick, cut stone and terra cotta, with three grand entrances on Olive Street, and one on Fourteenth and Thirteenth streets each. The first floor is devoted to live machinery, exhibits of which have been the largest ever made. The other floors are devoted to fine displays that have never been excelled, as is conceded by those who are in a position to know.

GRAND MUSIC HALL. — So extensive is the Exposition Building that one is surprised to find in its very center, the largest Music Hall.

Type of Structure in Vogue at St. Louis Exposition Where Brotherhood Took Its Life

Finger of Present Points Forward 50 Years

"IT was mid-day. Through the sweltering rays of the great energy-maker a lonely rider urged his halting monoplane. Below him all lay deserted, never a human habitation, never a highway, never a living person, only the endless lines of green growing things against the humid earth, with an occasional cultivating machine moving automatically, ant-like, down the furrows.

"Far off on the horizon something glittered, glowed like an opal, glistened with rainbow tints like a bubble resting lightly against the earth, and toward it the traveler headed. It was the city. As he drew nearer he could distinguish the massive arches which upheld the hovering, glassy dome. Like a bell glass covering some dainty morsel for a giant's palate, it covered the teeming life inside. At present the atmosphere inside the dome was artificially cooled and a slight moisture misted the transparency. From his plane he could hear the drone of the wind machines encircling the city, see the flash of the sun-scopes as each drew from its element some of its abounding energy to do the work of man.

"Other planes began to appear in the traffic lanes and the flyer maneuvered his craft into the stream that seemed to hum and cluster like a flock of gnats around the dome. Suddenly he turned and swooped toward a numbered gateway, a horizontal slit in the shining surface. As he rushed toward it he could see the twisted, molded pillars of translucent jade and amber, ornamented with grotesque animal figures and twined with vines and flowers that decorated the gateway. Ahead a great flap tipped up to let him through and he felt the grateful coolness of the city air on his cheek. He smiled his satisfaction; to the New Yorker there is nothing like New York. Besides, he was hungry; he had had nothing to eat since he left Vienna that morning and he was on his way to a loving wife and a delicious luncheon of synthetic pork and beans

Television—New Thrills On The Party Line

in his happy apartment home 60 stories above the street."

Free, Free All Free

This introduction is offered, free of charge, to any novelist of not more than 50 years hence; for, it is believed, all this and a great deal more is due to be a part of our world if scientists succeed in what they are now working out.

Or if the novelist of 1980 prefers, he may help himself to this one:

'"Well, well, *come in*, Bill, you old heap o' junk, park the lid on the table, yeah, that green one with the wavy legs. The wife'll be down directly, she's just having her violet ray bath. Why, sure you can leave your flyabout on the landing stage. That's what it's there for! Of course I got your radio, didn't you hear me answer? Well, I guess something's wrong again with the sending dingus; we haven't been catching the power the way we should. Still, it doesn't seem to affect the ice box. Lemme fix you a drink, Bill; yeah, that's my own mixture. Tastes pretty near like real gin—if anybody knew what real gin tastes like. I can't quite seem to kill that formaldehyde flavor. How about a little sandwich? We've got some pure petroleum butter; that's pretty rare now, you know; most of it is made out of acetylene, and they flavor up these proteins to taste a lot like ham.

'"Here comes the missus. Lovely dress, eh? That's rayon made from Iowa cornstalks, she tells me. She prefers it to the wood fibre rayon.

'"Now let's turn on the entertainment. You don't like these serious plays, do you, Bill? Sure, I knew you'd agree; there's nothing like a good musical comedy. Tune in on the 'Nineteen-Eighty Follies,' Tessie!"'

That's the way the hospitable host of 1980 is likely to talk, when science has persuaded old Ma Nature to go take a back seat, and everything is synthetic or electric, or both. Scientists are making a new sort of world for us and while there will be lots of surprises for us, we can look ahead and see the hazy outlines of what is to be.

Vast domed cities, enclosed like hot-houses, with an artificial climate of eternal spring; apartment homes of steel and poured concrete; furniture of clear, amber-like resinoids in strange new colors; queer synthetic foods in the radio-refrigerated icebox; "silk" and "woolen" clothing made from cornstalks or wood fibers; letters and telephone messages arriving via the radio receiver; and all the light and heat and power for the world generated from the sun's rays or from the boundless energy of the atom.

Such is the scientists' vision of the future, in part, and in the last two years they have made tremendous progress toward bringing the synthetic world to birth.

Synthetic clothing is a popular and commercial success. Rayon, formerly called fiber silk, made by a chemical process from wood fibers, is being ever refined and improved. Rayon is putting up a strong battle against real silk for fickle woman's favor, and it is cheaper to manufacture. New properties of rayon are being discovered—for example, it is claimed that celanese rayon fabrics act to insulate the wearer from heat or cold and at the same time allow the ultra violet rays of the sun to pass through to the skin of the wearer, giving her a healthful sunbath. Artificial wool for men's clothing is being made from wood pulp and the material looks like a glossy serge. All the wasted cornstalks of Iowa and the middle west are to be made into rayon through a new process, by a corporation to be located in this region.

The duco finish on your car, which you clean and polish so lovingly, is synthetic paint. The nitro-cellulose lacquers are causing a revolution in the paint industry—their discovery is regarded as the first change in the manufacture of paint from natural materials since the time of Mohammed.

Synthetic Dinners, My, Oh Me!

Synthetic food is a fascinating subject. We all realize that the food elements we need might be prepared by chemists in a very much simpler and cheaper form, but how we hate to think of losing our bread, meat, vegetables and sweets as we know them, with their alluring, flavorous appeal to the palate! No, thanks, if we must eat hash we'd rather have real beef and potatoes instead of soy beans synthetically flavored. But they are artful gentlemen, these scientists; they may fool us. As the wisecracker puts it, "Eggs now synthetically made from veal—and so's your old chicken soup!"

When butter soars sky-high it may be a comfort to find that edible fats can easily be made from petroleum, acetylene or natural gas. A sugar shortage may force into manufacture synthetic sugar like that, similar to dextrose, made not long ago by a Liverpool chemist from carbon dioxide and water; and the same combination, with the addition of nitrogen in the form of ammonia and nitrous acid produced a compound similar to proteins. However, since the human system is geared to its "three squares a day" we probably won't be getting along with three concentrated food pills instead, unless they can figure out how to change our internal plumbing.

In the meantime we're quite willing that science should concern itself with such aids to natural processes as ripening bananas by electricity, as is now being done at banana warehouses at Hull, England, through a complicated system of heating, ventilation and refrigeration.

Food factories instead of farms are predicted by L. A. Hawkins, engineer of the reasearch laboratory of the General Electric Company. Vitamines may be produced synthetically, he said recently in a talk to the National Electric Light Association convention.

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SOME DAY

Bananas Ripened By Electricity

When Caesar Sang, There Building Unions Were

By M. J. BUTLER, L. U. No. 259

Down out of the past comes a record of the struggles of building trades workers 1,500 years ago. Here is an authentic agreement entered into by carpenters at the time of the Caesars. It attests to the age and dignity of the building craft.

AN ancient document describes an agreement for preventing disputes in the building industry, drawn up at Sardis, in Asia Minor, some 1,500 years ago. The agreement was entered into by the Sardis Union of Building Artisans and the master employers of that city and deposited before the city magistrate, dated April 27, 459 A. D.

Not only the contents of the agreement, but its form expression remind us closely of present-day documents in the same field. The same stiff phrases, the never faltering love for words that nobody but lawyers use and no one understands. What is more important, however, is the basic industrial outlook from which the parties to the agreement proceed, the conditions under which a worker is obliged to discharge his duties and under which he is guaranteed the protection of his rights.

The document is written in these terms:

"Whereas your excellency has received divers accusations against divers persons practicing our craft, to the effect that they take in hand pieces of building work, leave these unfinished, and obstruct the employers, deeming it important to abolish an injustice so detrimental to the employers, you have requested from us this agreement and declaration under oath in the following terms:

"We do agree and make oaths by the holy and life-giving trinity, and by the safe preservation and victory of the Lord and the inhabited earth, Flavius Leo, everlasting Augustus and emperor:

"(1) That we will complete all pieces of work given out to us by any one of the employers, provided that the employer is prompt in paying to us the wages mutually agreed upon.

"(2) Should the man undertaking the work have any plea on which he declines it for some reason of his own, either private or public, another artisan from among us shall take his place and shall entirely complete the work under construction on the distinct understanding that the man declining it, whether he be the artisan who began or the man who shall have taken his place, is one of ourselves, and that no reason of our own stands in the way of the work.

"(3) Should the man undertaking the work once hinder the employer in any way while it is, as we said, under construction, if he who either began it from the beginning or shall have taken the place of any artisan is one of ourselves, we shall for such hindrance pay indemnities according to the actual contract between the employer and the artisan.

"(4) Should the employer show indulgence, if he be for seven days hindered from working, the work shall be left to the artisan undertaking it.

"(5) Should the artisan fall ill, the employer shall wait twenty days, and if after such indulgence for twenty days the man should get well but show no disposition to work at that time, another shall take his place on the terms stipulated by us to the man who has declined.

"(6) If when the man undertaking the work declines it, some one of us be found neither doing anything nor performing work in accordance with the provisions herein written, we bind ourselves to pay_____(sum) as a fine to be used for the city's public works, while the artisan shall be compelled to pay eight pieces of gold, and shall further be liable, even after exaction of the fine, to prosecution under the divine edict on the charge of injustice. The present agreement remaining firm, unbroken and undisturbed in perpetuity and being irrevocably carried out in strict conformity with all things above determined and promised by us.

"(7) And for the full discharging of the fine we pledge, under a lien both general and individual, all our property, present and future, of every kind and sort, and when as to all things above written the question was put to us by your excellency, we gave our assent to this agreement and declaration under oath, on the day and in the consulship above written."

As you read you can judge what good agreements were written 1,800 years ago. We should be pleased with such at this present age. And let me see what the two parties to a building contract can gain from agreement. To the employer it insures, except for the possible delay of twenty days under Clause 5, uninterrupted work, with indemnities for any interruption by the workman. If he throws up the job other workmen will be supplied by the union till it is finished. If he is dilatory or obstructive, the union guarantees his indemnity payments.

BANNER CARRIED BY L. U. NO. 1 IN EARLY DAYS OF THE UNION'S LIFE. NOTE THE "NATIONAL."

To the artisan the advantages are: That he need only work if his wages are punctually paid; that in case of sickness he is allowed twenty days for recovery before he can be replaced; that since only members of the union may be employed, he has no competition to fear from the outside.

As I can see, the benefits conferred by the agreements are thus similar to those which now induce employers and trade unions to adopt the principle of the "closed shop." This aims at securing for the former a steady supply of workers and a continuity of labor, and for the latter more stable wages and working conditions through the elimination of non-union competitors. Our agreement has the same purpose. Respecting rates of wages, strikes and intimidation, the evidence here embodied is valuable and it seems to me that the wages are ostensibly fixed by the several contracts between the individual mechanics and employers, and of union standards or minimum rates there is no mention.

Since, however, an employer can enjoy the benefit of the agreement only if he deals exclusively with members of the union, he has to pay them the wages which it permits them to accept. Thus a strict union agreement such as ours is a tacit adoption of union rates of pay.

It seems to me that the reason for making so formal a settlement was the desire to avoid the strikes which it seems had previously been frequent, and the charges against the building workers were that they leave these pieces of work unfinished and obstruct the employers, or in other words, they strike and prevent other mechanics from working.

And compensation by the union in the event of any further obstruction is stipulated in Clause 3. The fear of a repetition of such troubles must have protected the union rates of wages by discouraging employers from dealing with non-union workmen, against whose possible striking on misconduct their agreement would have afforded no remedy. To me, this agreement is worthy of notice.

Linemen have their ups and downs, too, opines Anthony J. Offerle, R. S. of L. U. No. 723, Fort Wayne, Ind., who tells this story of a lineman who was taken to a hospital for treatment.

After the leg had been set, the nurse asked him how the accident happened. He replied:

"You see, ma'am, it was this way, I was stringing for the company and I had only one ground mole. He sent up a big come-along and she was a heavy one. I was pulling on her and yelled to the mole to give the guy a wrap; instead he threw the sag into her and that broke my leg."

"Yes," the nurse hesitatingly replied, "but I don't exactly understand * * *"

"Neither do I," grunted the lineman. "The darn fool must have been crazy."

And he who hesitates these days should be equipped with rear bumpers, says Clark.

Poverty never destroyed either an individual or a nation. Wealth is the danger.—*James M. Curley.*

The Lineman

THEY sings of the men as goes down to the sea;
Of the heroes of cannon and swords;
An' writes of the valors of dead chivalry,
An' the bravery of old knights and lords.

They sighs 'cause the romance of knighthood is past—
'Cause there ain't no ideals any more—
They says that this old world's a-rolling too fast
To develop that "esprit de corps."

But them as complains are the ones as don't know—
Who sit loose where it's warm and then kick.
They ain't never seen a line sagging with snow
An' had to get Service back—quick!

They ain't never struggled with Death at their side,
A-snapping, an' hissin' an' pale—
Nor clung to the towers and grimly defied
The assaults of the blizzard an' gale.

They sit and are served with never a thought
Of the fellers out pluggin' like hell
To supply at their touch the Service they've bought
With a light, or the sound of a bell.

They forget, when the baby gets sick in the night,
An' a storm's raging fiercely outside,
What they owe to the feller that's makin' a fight
That their Service shall not be denied.

These fellers ain't togged out all shining in steel—
They don't ride around on no hoss—
They don't sing no songs about how they feel
In the gales when the feeders may cross.

They don't wave no banners embroidered with gold,
In Latin nobody can read;
They don't do no braggin' of deeds that were bold—
Their motto is "Service and Speed."

Their armor ain't nothing but slickers and boots—
Their weapons are climbers and pliers—
Their battles are fought up where high tension shoots,
An' Death lurks unseen on the wires.

They're fightin' the gales and the blizzards and ice—
Protectin' the towers and span
With effort not measured in hours or price—
For one cause—just SERVICE TO MAN.

So here's to the lineman—the son-of-a-gun
That can go without sleep for a week,
That sticks to the job till it's every bit done,
An' the feeders can carry the peak.

For his is that knighthood that's noblest by far,
That highest and mightiest clan,
That's fightin' the battles of things-as-they-are
In the cause of the SERVICE FOR MAN.

Author Unknown.

Conference Method of Settling Disputes Pays

By CHARLES P. FORD, Secretary, Council on Relations for the Electrical Construction Industry

STRIKES occur. The public becomes acutely aware of a morbid condition in the industry. After loss and suffering, strikes end. The public forgets. Losses are counted usually only in dollars and cents. The business of the industry proceeds, but incalculable harm other than financial has been dealt to the industry by the strike, harm which is taken too little in account by all concerned. Why? Because every strike makes future industrial peace more difficult. Strikes sow hatreds; they sow suspicion; they sow misunderstandings and future controversies. In an industry where strikes are a habit, the substitution of industrial law for force is a long hard task. Workers and employers get so enmeshed in hatred that calm judgment is next to impossible. The result is that the building of an orderly industry is definitely delayed.

Contrary to impressions created by anti-union advocates, workers do not want to strike. They are the greatest sufferers, and only strike because conditions are intolerable and because there is no other way to make protest and to remedy conditions.

Thoughtless critics and industrial back-numbers among employers and legislators, who do not appreciate the foregoing conditions, attach blame usually to the strikers. They try a number of solutions. There has existed, and still exists, a league of employers whose sole aim is to secure the outlawry, and we think groups have loudly and we think foolishly, talked about "whipping men back to work;" or they have sought injunctions to make men work; or they have set up one-sided tribunals to force arbitration; or they have gone out to break the union. All these devices, to date, have failed, and will fail for the simple reason that all factors in the situation have not been taken into consideration.

Fortunately, in the electrical construction industry there have been men who were willing to face all the factors. Two of these, L. K. Comstock, now chairman of the National Council of Industrial Relations and an important employer of labor on a national scale, and James P. Noonan, president of the International Brotherhood of Electrical Workers, labored diligently to graft a new course of procedure on the old customs of the industry. Mr. Comstock brought to the situation an earnest conviction that the conference method could be applied to the relations of employers and workers. He was indefatigable in urging this point upon electrical employers. Many of them were willing to leave the old, sorely tried ways of trial and error. That his efforts were in the end appreciated is indicated by the fact that this year the James H. McGraw prize, awarded to the electrical man who contributed most to the common good of the industry, was given to Mr. Comstock.

Faces All Factors

That Mr. Comstock early faced all factors in the situation is indicated by the analysis he made of relations between employers and workers. "I think it more correct to speak of attitude of the employer" he said (for his full statement see article in the ELECTRICAL WORKERS JOURNAL for February, 1926), "as one of exploitation, conscious or unconscious, and of the employed, the dull antagonism of despair and defenselessness." At the same time, President Noonan, with his flexibility and progressivism, co-operated heartily with Mr. Comstock. So it came about that in 1919 after a number of conferences that the electrical employers and electrical workers jointly worked out and adopted principles and methods that created the "National Council on Industrial Relations for the Electrical Construction Industry of the United States and Canada"—a long title for a simple thing; a new thing and, as it has proved, a practical piece of machinery.

It was plain from the start that if the setting up of judicial machinery was to be a success, the conferees had to see industry as it is. They did not pretend that modern industry is the same now as it was thirty years ago. They acted upon the assumption that the highly commercialized, competitive, highly capitalized construction industry presented problems which the old building industry did not know. They saw that absentee ownership and control, and the lack of proprietary interest on the part of the men who are actually on the job, snarled the old economics and the old methods of procedure.

In this wise, a Declaration of Principles preceded the creation of the judicial machinery. These principles should be stated:

1. The facilities of the electrical industry for service to the people will be developed and enhanced by recognition that the overlapping of the functions of the various groups in the industry is wasteful and should be eliminated.

"2. Close contact and a mutually sympathetic interest between employee and employer will develop a better working system and will tend constantly to stimulate production while improving the relationship between employer and the community.

"3. Strikes and lockouts are detrimental to the interests alike of employee and employer and the public and should be avoided.

"4. Agreements or understandings which are designed to obstruct directly or indirectly the free development of trade, or to secure to special groups special privileges and advantages are subversive of the public interest and cancel the doctrine of equality of rights and opportunity, and should be condemned.

"5. The public interest is conserved, hazard to life and property is reduced, and standards of work are improved by fixing an adequate minimum of qualifications in knowledge and experience as a requirement precedent to the right of an individual to engage in the electrical construction industry, and by the rigid inspection of electrical work, old and new.

"6. Public welfare, as well as the interests of the trade, demands that electrical work be done by the electrical industry.

"7. Co-operation between employee and employer acquires constructive power, as both employees and employers become more completely organized.

"8. The right of employees and employers in local groups to establish local wage scales and local working rules is recognized and nothing herein is to be construed as infringing that right."

Machinery Described

The machinery of the Council is simple. Five members from the employers and five from the union compose the personnel. At present the Council members for the employers are: A. J. Hixon, Boston; J. A. Kelly, Cleveland; M. H. Johnson, Utica; John H. Busby, Detroit, and L. K. Comstock, New York; and for the union: J. P. Noonan, Charles P. Ford, E. F. Kloter, Washington, and W. A. Hogan, Mt. Vernon. Vacancy left by the death of F. J. McNulty has not yet been filled. When a local union and the local organization of employers fail to agree, they may refer the question or questions at issue to the Council. Submission blanks and questionnaires are supplied by the Council. Each disputant must sign his submission blank; in other words, both parties of the controversy must call on the Council's services before the Council will consent to sit on the case. Oral appearances are not required, though they are encouraged. Much weight is attached to the briefs submitted by the disputants. Briefs are required, and each disputant must receive a copy of his opponent's. After the submissions have been made, the Council appoints a day for the hearing, usually in New York City or Washington, D. C. The disputants appear at sessions which are public. Decisions of the Council must be unanimous. Since the Council's inception dozens of cases have been adjudicated with results generally accounted happy, and with not one instance of divided vote.

It is natural that certain general policies affecting practice should grow in such a judicial body as the Council. These may be considered the body of organic law which the Council is slowly creating. In general these policies have been said to favor: (1) stabilizing the industry by preventing sudden changes in wages; (2) industrial peace through conference and negotiation; (3) recognition of the right of workers to organize and to have adequate representation; (4) the sanctity of agreement; (5) adequate wages and high production.

The sanity of the Council is indicated by this pronouncement on wages: "Wages should be adjusted with due regard to purchasing power of the wages and to the right of every man to an opportunity to earn a living and accumulate a competence; to reasonable hours of work and working conditions; to a decent home, and to the enjoyment of proper social conditions, in order to improve the general standard of citizenship." This is probably as liberal an interpretation as has been made by any industry in the United States.

It is not unlikely that the very existence of the Council has lessened tension between the contending parties in the electrical construction field. The mere presence of machinery, which to date has proved its usefulness, inhibits impulses to strike and to lockout. The Council has set up a pattern agreement, which, when used by local unions and employers when making contracts tends to lessen the chances for misunderstandings and to eliminate causes for strife. Finally the Council has greatly stimulated interest of both employers and workers into the underlying economic fact and structure of the electrical construction industry. It has been to a high degree an educational influence strengthening reason, and allowing knowledge founded on research to be a ruling factor in decisions.

There has been docketed with and decided by the Council a large number of cases. These cases have involved all the electrical workers in the industry in scores of cities. Among the large cities are New York, Detroit, Cleveland, Indianapolis, Washington, Baltimore. The fundamental methods of the Council have been used—locally in innumer-

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Journal Fulfills Ideals of Union Founders

THERE are only a few monthly magazines in America older than the JOURNAL OF ELECTRICAL WORKERS. Not age alone makes a publication, however, as every reader knows. There must be dignity, honesty and enterprise; and above all else a large family of intelligent and loyal readers. There must be these things, and more; there must be a well-thought out, practical, social point of view, a philosophy, if you will, and it is this that labor's economic and social contentions, forged by experience, supply.

Consider for a moment, the publication field in the United States. First, there is a disappearance of what might be called personal journalism. The day when a man buys a magazine because a Godkins edits it is past. Who knows or cares, what George Horace Lorimer's views are, yet two millions buy the Saturday Evening Post. No, big magazines are pretty much corporation enterprises, or if you will, class—business class—enterprises. Second, there is disappearance of what might be called democratic journalism. Few publications burn with ardor for the masses. There are hundreds of publications serving special interests with discrimination, skill and richness. The press agent has arrived, and with him, Mr. Propaganda with his glib pen, and his genius for making black look white. A President, who loves his office desk more than he does outdoor life, can be made to resemble a cowboy—a cowboy of the movies at least. A Secretary of Commerce, with presidential possibilities, can be given the credit for flood relief, carried on by thousands and thousands of subordinates. An oil magnate in legal difficulties with the federal government can be made to appear an innocent and useful citizen much maligned by self-seeking politicians. Such is the power of the inspired word.

Labor Journals May Lead

In this unbalanced journalistic situation the labor publication can perform a real social function. The labor publication is not dependent upon advertisers for its life, and so it can politely show press agents to the door. It is immediately responsible to its readers, who are its owners, and it must serve them by espousing causes which are of practical and actual value to the masses. When it does honestly and intelligently do these things, it also serves the community as a whole.

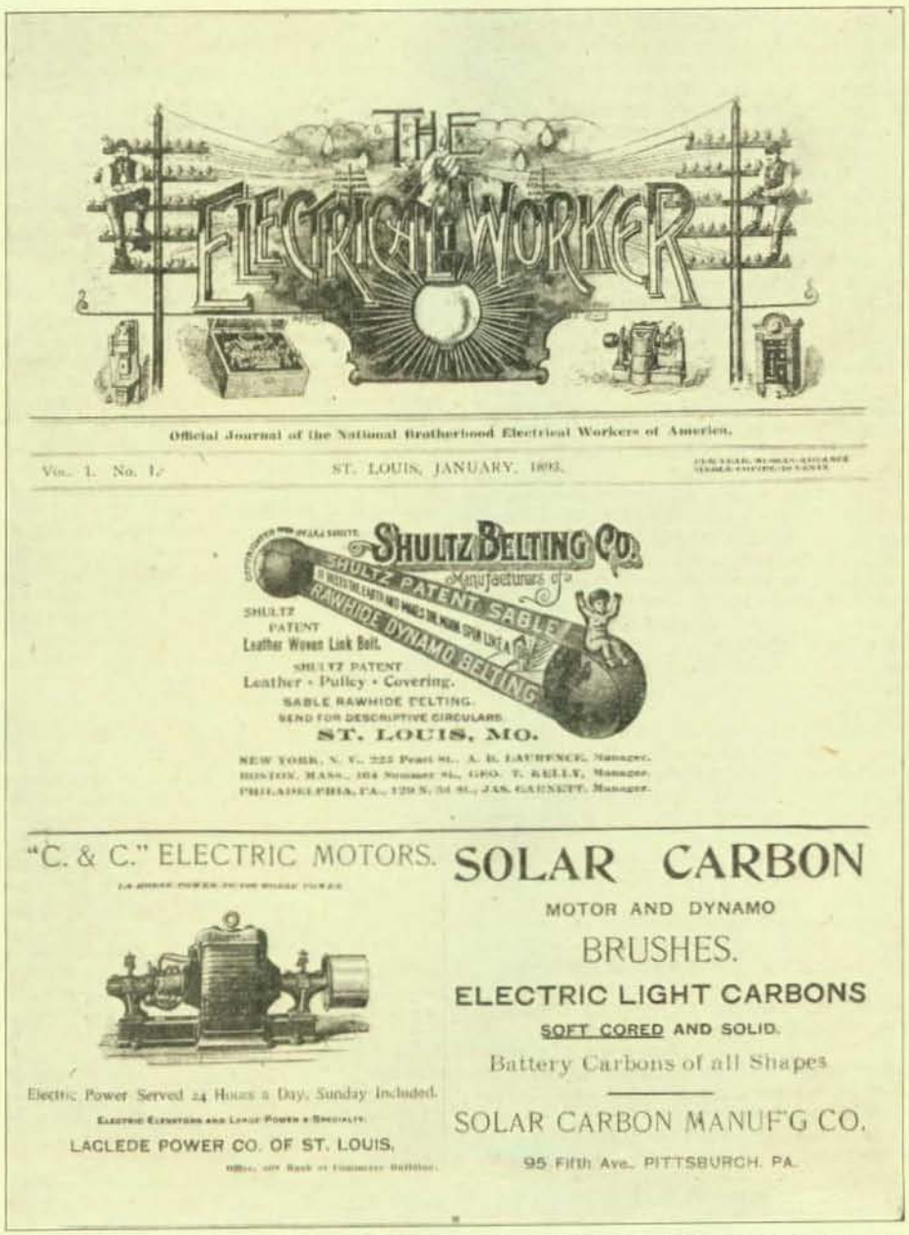
The JOURNAL OF ELECTRICAL WORKERS has conscientously tried to live up to this opportunity and this responsibility. It realizes that it has fallen short of its goal, but it is heartened by some success measured simply by the eager response of readers inside and outside of the organization.

The JOURNAL was founded in 1891. That the founders foresaw a field for the JOURNAL, touching important economic and social questions is indicated by the statement made by the secretary and editor to the Detroit Convention in 1899. He said:

"Sec. 2 of Art. XXI of our Constitution, provides that the Grand Secretary, in conjunction with the E. B. shall publish an official journal of the National Brotherhood of Electrical Workers of America. The JOURNAL thus published is known as the ELECTRICAL WORKER, and has now been published under the same management for five years. It has been the aim of the editor to make the ELECTRICAL WORKER a worthy representative of the organization it represents. Also to make it as useful as possible to the members by publishing such electrical matter and instructions as the editor in his judgment considered of practical importance to electrical workers, in making them more proficient in their respective branches of the trade. In addition to this, much matter has been published on the labor movement in general, and the American Federation of Labor in particular. Also social and economic questions have been given a liberal space. Nearly one-half of the paper each month is devoted to correspondence from the different unions. This has proven to be very interesting to our members, and if unions are careful and elect competent press secretaries, who will devote the necessary time to their duties, should enable any member to know the condition of work in all cities where there is a local, and would be a guide to members out of work in directing them where they could go with the best chance of securing employment. I am sorry to say, however, that some of our unions have been very careless in this matter, and have either not elected a press secretary, or having elected one failed to insist on his performing his duties. In consequence of this, it frequently has happened that important unions and cities have been for months without a letter in the WORKER. Many of the letters received have not been up to the standard we should naturally expect. Others again have dealt in personalities that have caused hard feelings in the local. This has been a delicate matter for the editor to handle, for if he refused to publish a communication received, it would cause dissatisfaction, while if he published the communication there would also be dissatisfaction. He has used his best judgment in all cases, and will let the ELECTRICAL WORKER for the past five years speak for itself."

Idleness is the mother of all the vices; but vice is the father of all the arts.—*Paul Morand.*

Tennis is an absolute science.—*William T. Tilden 2d.*



FACSIMILE OF NO. 1, VOL. 1, OF THE JOURNAL—THE FIRST MAGAZINE OF THE UNION EVER ISSUED

Research Paves New Way to Reign of Reason

LABOR has never been afraid of facts. As a rational consequence of this open-eyed and frank consideration of social questions, it was inevitable that labor would recognize the value of research—industrial research. The new emphasis on research methods and research findings in wage negotiations has been recognized by the American Federation of Labor, International Brotherhood of Electrical Workers, the International Typographical Union, and other labor organizations. This means that labor meets employers across a conference table in possession of basic facts on living costs, living standards, wage trends, price levels, and business fluctuations. And because statistics, like every other known discovery, have shades of meaning and turns of emphasis, it is important that statistics be gathered and interpreted by men who know labor's problems and labor's struggles. Statistics divorced from life are dead and often deadly tools.

The holding of trade union conferences, at Brookwood, Philadelphia Labor College, Bryn Mawr and other institutions is indication of the new trend. Labor has decided to pool its experience and exchange ideas in coping with the problems of the industry. This utilization of research findings and methods is said to strengthen the hold that conference methods of settling disputes have over the movement.

At the same time, the trend toward research is manifested in every corporation and in every industry. This trend is described by Columbia University this way:

"One of the most striking economic developments of recent years has been the wide application in the field of private business of methods of statistical analysis which had hitherto been generally restricted to governmental and academic studies.

"Under the stimulus of this movement statistical departments were installed by numerous enterprises, statistical agencies sprung up, and business forecasting took on the mantle of respectability."

There have been abroad misconceptions as to the part that statistics might play in business administration though.

"Statistics have been identified by some with business forecasting, and business forecasting has not gratified all the hopes it has inspired. Those uncertainties in business which defy prediction and which embarrass the best laid plans in some quarters impaired confidence in this new agency of business control.

"What remains after this development has been rid of the fads and fancies which attach themselves to it in the flush of its introduction? Stripping away all misconceptions there is left, beyond question, a tool of great practical importance and wide utility.

"Measurement is of the very essence of statistics. The role of statistics in business is to widen the field within which precise methods of measurements may be applied, and by so doing to restrict the part played by guesswork and the rule of the thumb.

"Measurement, in terms of monetary values, has long been familiar to business. The foundations of modern business methods were laid in the old ledgers of Italian and Dutch merchants and bankers. But such pecuniary measures cover only part of the activities of a business enterprise, and even these measures are not exploited to the full in orthodox accounting procedure.

New Methods

"Not until accounting was supplemented by the methods of statistics were the general operations of business brought within the field of precise enumeration and exact reckoning.

"The power of condensation, terse description and graphic presentation and the ability to trace subtle relationships which the technique of statistics conveys has made possible a more accurate analysis of business processes and closer and more effective executive control.

"Statistical technique has not only brought within the realm of measurable facts such intangible things as the level of prices, the cost of living and the volume of trade, but it has reduced to measurable terms numerous aspects of internal business administration.

"Unit costs, productivity per man-hour, the salesman's quota, purchasing, production and selling schedules extending six or twelve months into the future—these are some of the fruits of the more precise methods which are being applied in the planning and administering of business enterprises.

"This increased emphasis upon quantitative method in business is reflected in the courses of study offered in American universities. The curriculum of the School of Business of Columbia University provides an example of this development.

Knowledge of Methods

"It has been recognized, in organizing the program of business instruction at this school, that a mastery of statistical methods is indispensable to the student of business, as it is to the student of any of the social or biological development.

"Accordingly, a systematic effort has been made to provide problems and every-day affairs. A general course in statistics is mandatory upon all students in the school, while a group of advanced courses offer intensive training to specialists in the subject. Laboratories enable advantage to be taken of those modern mechanical devices which, by reducing immeasurably the routine labor involved, have stimulated the application of quantitative methods to business.

"This training, with its realistic laboratory procedure and its emphasis upon concrete problems, is much closer, both in form and spirit, to the discipline of scientific and engineering schools than it is to the economic class-room in which subjects of commercial importance were exclusively taught a generation ago.

Concentrate on Facts

"It is true that in statistical laboratories calculating and adding machines are to be seen instead of test tubes and dynamos, and that the raw materials are prices and wages, purchases and sales, in place of chemical elements and physical observations. But there is the same concentration on facts—facts which may be weighed and measured—and upon relations between facts. This is a resemblance in fundamentals.

"The fact of this resemblance should be of more than passing interest to business men, as well as to business educators, for the spirit of precision and the desire for foundations of fact are not restricted to any one course of instruction in the schools of business today."

At the same time, the Electrical World finds that colleges are backward, when it comes to research bearing on fundamental problems.

"Public appreciation of research work is increasing, yet research work in the colleges is decreasing. Every barometer indicates a rapid drift of research work from the colleges to the industrial research laboratories. A recent study published in *Science* shows that only one-eighth of the research work done in the electrical and radio fields of science is done in the colleges. This study further shows that more than half this college research work is done by eight men. This is a startling and discouraging state of affairs and will have an undoubtedly bad effect on technical education. A research environment is an essential element in the training of young men and is needed to stimulate the college teachers.

"Many excuses are brought forward by the colleges for their laziness in research work. Stock reasons are lack of money, lack of equipment, lack of contact with industry, lack of easy teaching schedules and lack of knowledge as to what researches would be desirable. Many of these excuses may be valid, but most research has been accomplished under difficulties. The will to do and the brains to accomplish research are not frustrated by lack of money or lack of equipment. Newton had only an apple tree, Watt a teapot, Edison some plant fibers, Maxwell and Heaviside some mathematics. Some of the best researches of recent days were made with twine, galvanized iron, magnet wire, oil, thermometers and a precision instrument. A wealth of research equipment is the last consideration—it comes after, not before, a research idea or a research accomplishment.

"Colleges should do fundamental research on the atom, the electron, the ion and the quantum. Our so-called scientific laws have fundamental exceptions and are mostly empirical rules. A dearth of knowledge in fundamentals in science still exists. In these regions lies the major field of college research, and the large commercial and transient research projects should be left to the commercial laboratories. It would seem evident that a little more keenness for research is needed in college circles."

Chemist Proposes Cheap Defense

A war-time defense for the United States consisting of air-planes equipped with poison gas, was advocated before the American Chemical Society's Institute of Chemistry, in session at State College, Pennsylvania, by Dr. J. E. Mills of the Chemical Warfare Service of the United States Army. The chief advantage of such a defense system, Dr. Mills believes, is that it can be put together quickly out of things used for peaceful purposes. The necessary airplanes will be used to carry mail, freight and passengers. The facilities for quick manufacture of poison gases can be provided by relatively slight modification of plants for industrial chemicals, dyes or similar products. It is possible, Dr. Mills thinks, for a nation to equip itself with many airplanes and many chemical factories, virtually without expense, for both will be paid for by their peace-time uses. But both can be converted quickly, in case of war, into the most effective kind of military defense now known. Preparedness can be made to pay its way, or most of its way. "It means eventually national security," he said, "without large national armaments." Dr. Mills ridiculed statements that a few pounds of poison gas could depopulate a city. No gas so effective as that is known or considered possible. Gas is merely a very effective weapon, especially when used from aircraft and for defense.

Modern Dynamos And a Poor Bookbinder

By PROFESSOR C. M. JANSKY, Electrical Engineer, University of Wisconsin

"To him who, in the love of nature, holds Communion with her visible forms, she speaks a various language."—W. C. Bryant.

IT has taken man ages of time to learn merely the alphabet of that language, and this has been deciphered by those patient souls who loved nature. One of these translators of nature's "various language" was Michael Faraday whose entry upon a scientific career was so briefly and inadequately sketched in the preceding article.

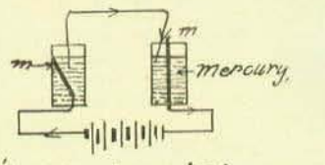
It has taken man a long time to learn that nature's language is not a jumble of dissociated and discordant sounds and symbols, but that throughout nature's phenomena and manifestations runs harmony and a unifying principle or principles. The discovery and explanation of these unifying principles is the real task and aim of science. Science is not a mere collection of categorical and immutable facts, but it is an unfolding and harmonizing process. In essence science is a series of judgments by men of the past on the results of observational findings presented to them. From this series of findings has resulted the body of scientific knowledge which we now possess. These findings are not absolute, but relative and are ever being modifed, transformed and harmonized by new interpretations of nature's "various language." This is the central theme of these articles, and the lives, discoveries and achievements of the men of science are exemplifications of this theme.

In the realm of biology, or the study of living things, the doctrine or theory of evolution is the unifying principle. In the realm of the physical sciences no such general principle has as yet been established unless the theory of the electron interpreted by the theory of relativity proves to be "it." But as usual we are getting ahead of our story. The theories of the electron and of relativity can not function until data and phenomena are available for interpretation. Let us, therefore, get back to Michael Faraday and see what part of nature's language he interpreted, and later we shall see how his interpretation harmonized and unified apparently dissociated phenomena.

Sought Common Principle

Ampere showed that electric currents flowing in adjacent conductors mutually reacted. That is to say, the conductors were attracted and repelled. Oersted had shown that a current carrying wire deflected a magnetic needle. As two magnets acted on each other in a like manner it was apparent that the influence of the electric current was likewise magnetic. Suppose some prophet without experiment and without investigation had proclaimed or predicted identical properties of the lodestone of Magnes, and of Volta's pile, how long would he have escaped incarceration as a dangerous lunatic! But even in the realm of physics truth is stranger than fiction. But that is not all. Arago found that by mounting a magnetic needle above a copper disk and rotating the disk the magnetic needle would rotate in the same direction even when a glass plate intervened. No satisfactory and reasonable explanation of this truly remarkable and to many seemingly magical phenomena was forthcoming from Arago or anyone else until the problem was attacked by Faraday, the bookbinder's apprentice. Here were three apparently distinct and different phenomena, and yet Faraday assumed there must be some common principle which, when understood, would explain them all.

The entrance of Faraday upon the duties of assistant to Sir Humphrey Davy was merely a new apprenticeship for the future scientist. His first duties were very humble and differed little from those of a laboratory janitor. He assisted the renowned Davy in his demonstrations by bringing out the desired apparatus and removing it when the lectures were over. In addition he kept the rooms and apparatus clean and in order. As his duties were not exacting he had considerable time to devote to study and experiment on his own account. His leisure hours were hours of opportunity to observe and to understand the demonstrations of his master. His lack of preparatory scientific training was a handicap which seemed to challenge his intellect to simpler and more easily understandable explanations. The mere expression of the relation between physical phenomena in a mathematical equation by employing literal symbols meant nothing to him. He strove to visualize the fundamental



Faraday's experiment showing rotations caused by an electric current

essence of the interrelation of physical phenomena as a reality and not as a mathematical abstraction. It was this insight into physical reality that sets him apart and above other physicists.

During his apprenticeship he joined the city Philosophical Society, and together with a few congenial spirits, he discussed scientific subjects. This was his first experience as a lecturer, and the training acquired in the small discussional group proved in later life to have made of him a teacher of surpassing power. It is related that so simple and clear were his discussions of electromagnetic phenomena that the street urchins of London were attracted to his lectures. This is an achievement that few if any modern expounders of scientific subjects can hope to reach.

Another part of his training as a devotee of science was a trip abroad as philosophical assistant to Sir Humphrey Davy. On this visit the social barriers that denied him advancement at home were leveled by the difference of nationality and by the ignorance of the foreigners of his humble and obscure origin. He was thus permitted to investigate laboratories and to discuss scientific problems with masters on a basis of equality, and to form friendships which lasted through life.

Apprentice Pay Very Small

On his return to England in the spring of 1815 he was promoted to be assistant and superintendent of apparatus at the Royal Institution at the meager salary of 30 shillings (about $7.50) a week; his apprenticeship was over and he entered upon a scientific career. Science thus became his mistress as a matter of choice. His friend John Tyndall once wrote, "He—Faraday—said to me, that at a certain period of his career he was forced definitely to ask himself, and finally to decide, whether he should make wealth or science the pursuit of his life. He could not serve two masters, and he was therefore compelled to choose between them." The choice of this poor boy is remarkable from several viewpoints, but only one will be emphasized here. The heroic consecration of a youth who had experienced the deadening effect of poverty to a life of poverty for the sake of science has in it something of the sublime.

But enough of this personal story of a man who 25 years after his marriage recorded the following entry in a voluminous book of diplomas and honorary certificates:

'25th January, 1847.

Amongst these records and events, I here insert the date of one which, as a source of honor and happiness, far exceeds all the rest. We were married on June 12, 1821. M. Faraday."

The first important problem in the electrodynamic field that Faraday tackled was that presented by the experiments of Arago. The transmission of power by radio today is more mystifying than was the transfer of power from a rotating copper disk through a glass plate to a magnetic needle mounted above. Even after one hundred years if Arago's experiment were performed before a vaudeville audience most of the observers would class it with the magical and sleight of hand tricks so mystifying to the uninitiated. The only means then known by which force could be transferred from one agent to another were material and yet Arago showed that some unknown agent must be active in moving the magnet, what was that agent and how was the force transmitted drew the attention of the foremost physicists of the age. Faraday first centered his attention on Oersted's experiment and by an ingeniously devised piece of apparatus he made a magnet rotate about the current. He reasoned that if a stationary wire carrying an electric current exerted a force on a stationary magnet, then if the magnet were to turn it, too, would revolve around the wire but how to show this! Aye, there was the rub. The sketch of his apparatus shows better than reams of description how this was done. The device is so simple and ingenious as to show that he had completely analyzed the problem and had visualized the reactions in his own mind. By the simple device he showed that if the magnet were free to turn, it would revolve about the wire dipping in the cup of mercury, and likewise, if the magnet be fixed and the wire be free to turn it too would revolve around the magnet. Very simple say we when we know how it is done. Very simple said the envious critics of Columbus, "all you had to do was to sail westward." Very lucky say the envious "stay-at-homes" of Lindbergh's achievement, but few if any of these wise-acres ever contribute to human knowledge and achievement.

Faraday was, however, not satisfied with the mere design and assembly of apparatus to show a force between a current and a magnet. That was only a part of the problem. It required the play of his penetrating imagination to answer the question, "how is the force transferred from the magnet to the wire?"

Advanced Electrodynamics

In answer to this question he assumed the existence of a universal and omnipresent

(Continued on page 443)

WOMAN'S WORK

The Human Side of the Budget

An Open Letter to Ethelbert Stewart, U. S. Commissioner of Labor Statistics

Dear Commissioner:

WE want to applaud you and the Bureau of Labor Statistics for letting the industrial world know that a standard of living cannot remain stationary for nine years—at least not in the United States. And that, therefore, unless a new budget survey can be made to find out how workers' families are living NOW, the cost of living index, based on the budget survey of 1918, will be issued no longer, despite the "protests of a large number of concerns that have a sliding scale of wage rates based upon the Bureau's cost of living index."

Concerns who expect to sell goods to the standards of 1927 cannot expect workers to live according to the standards of 1918.

The budgets made by the Bureau in 1918 were fine—for 1918. We looked over some of them. It's true, even in what was called "a Standard of Health and Decency" no provision was made for a savings fund for old age, nothing for books or magazines, nothing for vacation trips or holidays unless it could come out of the slim $20 a year for amusements and recreation. There was nothing left over for periods of unemployment when your average family of five had paid for their food, clothing and housing requirements. Street car fares you allowed—most workers ride to work some way—but never a mention of an automobile. Automobiles for workers were severely frowned on in 1918. What would happen to the automobile industry if workers didn't buy cars now? The Detroit motor barons ought to be the first to offer you moral support as you seek to revise the budget, Mr. Stewart!

As we understand it, in 1918 the Bureau undertook to estimate the normal requirements of a family of five—just what they could get by on and keep their feeling of self-respect and decency. The "average" family which was estimated to consist of husband, wife and three children below the age of 14 years were to live their happy though frugal life according to this standard:

(1) A sufficiency of nourishing food for the maintenance of health, particularly the children's health;

(2) Housing in low-rent neighborhoods and within the smallest possible number of rooms consistent with decency, but with sufficient light, heat, and toilet facilities for the maintenance of health and decency;

(3) The upkeep of household equipment, such as kitchen utensils, bedding, and linen, necessary for health, but with no provision for the purchase of additional furniture;

(4) Clothing sufficient for warmth, of a sufficiently good quality to be economical but with no further regard for appearance and style than is necessary to permit the family members to appear in public and within their rather narrow social circle without slovenliness or loss of self-respect.

(5) A surplus over the above expenditures which would permit of only a minimum outlay for such necessary demands as—

Street car fares to and from work and necessary rides to stores and markets;

Keeping up a modest amount of insurance;

Medical and dental care;

Contributions to churches and labor or beneficial organizations;

Simple amusements, such as the moving pictures once in a while, occasional street car rides for pleasure, some Christmas gifts for the children, etc.;

Daily newspaper.

And not a bad budget at all, Mr. Stewart, for every family ought to have at least this much. Then the bureau figured out what it would cost to buy this at the prices of 1918 and the kind of things we bought in 1918—so many beans, so much bread, so many shoes and the repairs thereto, so many flannel nighties and cotton dresses, made at home. All very meritorious. But then, as each succeeding year came, with its changes in the prices of these articles, they figured how much it would cost to buy the living standard of 1918 at that year's prices. And in the meantime the living standard of 1918 has become not only obsolete—it's extinct. We just don't live that way, that's all.

You can see a style-picture of the woman of nine years ago from the items in the budget for the wife's clothing—wash skirt, with a wash cotton waist tucked into the belt, a stiffly starched muslin petticoat with embroidery around the full flounce; a corset cover with a draw string at the waist, covering a corset of matronly lines; cotton unionsuit; high shoes of serviceable calf, and *cotton stockings!* Yes, indeed, cotton stockings, eight pairs a year. Wouldn't a modern department store gasp if this creature came walking down the aisles?

Oh, no, Mr. Stewart, you know we can't dress like that! That part of the budget is certainly all wrong; you must bring this female up to date. Where would she find those stout-soled, serviceable high shoes, and oxfords all buttoned up at the side? Two pairs of these would last her a year, the bureau calculated. Translate that into the light kid pumps of today, worn out in three months or less! Calculate the mileage on a pair of fragile chiffon hose, tell us how many pairs should last us for a year—we'd like to know. And if we can't have silk hose, Mr. Stewart, we'll wear rayon, but cotton * * *! it isn't even on the market.

We've been studying and studying over those neat budget figures, Mr. Commissioner, everything so completely accounted for, every dollar doing its own little job and only two thousand odd to do it all, and honestly, we can't figure how that family could ever manage to be buying a car, paying for 10 or 15 gallons of gas every week and a quart of oil, a tire once in a while and a trip to the service station to be overhauled—and isn't it really scandalous the way those service stations stick you up? We scan the budget sorrowfully. No, the money just isn't there, and that nice family of five persons with three children under 14 never would get a chance to ride in a car unless some of the relatives came around of a Sunday and managed to squeeze them in, with the youngest boy sitting on his father's knee. *They* never could dig enough out of the budget to buy a car, why, they couldn't even save up enough to make the first payment.

It's odd, though, isn't it, how many families, even among working people, do have cars? Some of those families can't be making much more than $2,000 a year. But cars they must have, and cars they will get, and have got. Where does the money come from?

We'll wager the women could tell you. They know how this domestic economy works out. It hits the women and children first.

At the dinner table, Mr. Jones, head of the "average" family, reaches into his pocket with deceptive cheerfulness.

"Let's see—here's $25 for you, Susie!" he announces generously.

"What's the matter, didn't you get in a full pay this week?" demands his spouse suspiciously.

"Sure did."

"Well, now, Jim, you know as well as I do that I've got to put away $10 every week or we'll never be able to pay the rent or the light bill, and I *can't* get by with less than $13 for groceries no matter how hard I try and you know yourself how you kick whenever we have creamed dried beef or something cheap, and the insurance is due, and Tommy's shoes are so far gone he's practically on the street and— and—

"And what?" inquires Jim, grimly.

"And this dress is practically a wreck, you can see yourself, and I saw such a cute summer wash silk at Goldenbrick's * * *."

"I'm sorry, Susie, but you know we gotta have some new tires. That rubber on the rear is totally shot; I patched them tires twice last week and if we figure to go any place Sunday I'll have to get tires now."

"Well * * * Mary, now eat your pudding!"

"Why dontcha put more raisins in it, ma?" asks materialistic Mary with childish directness.

So the next day there are new tires on the car but Mrs. Jones sighs as she weeds her tiny vegetable garden when Mrs. Smith, her neighbor, passes by in another brand new summer silk dress—and it does seem that woman lives for nothing but clothes, but she can do that with no children and everybody knows the grocer is dunning them.

The automobile has won a place for itself with the American family; it can't be ousted, any more than the automobile industry can be ousted from the business

world. In spite of all that has been said against them, we think automobiles are all right and families ought to have them. Riding across the continent in a flivver can do more to destroy provincial prejudice than a college education; and family outings do as much to keep the home together as church and state combined.

But we believe, and we wish you'd notice in your survey if it isn't true, that automobiles are paid for with beefsteaks, women's hats and children's underwear, and the living room used for sleeping quarters. Plenty of couples run a car but can't afford to have children; but especially, we believe, cars are paid for and operated by women's pinching economies. "After all," Susie consoles herself, "nobody sees what I put on the table except the family, and the neighbors don't notice the patches on Tommy's underwear or the holes in Mary's shoes but they all know whether we've got a car or not."

It's not a competition any more between brands of this or that so much as it is a competition between kinds of commodities —rent against clothes, a radio against sending out the laundry, movies against groceries, and a car against practically every other item on the list. We've got to buy. There's the hideous pressure of goods to be sold hanging on the shoulders of every merchant and manufacturer, hammering the typewriter of every advertising man till they fairly bully us into buying, or insist on putting the goods into our hands without even the formality of a down payment.

While we're on that subject, Mr. Stewart, couldn't the bureau take note in their survey of how much more it costs us to be wearing things out before they're all paid for, and what place finance charges have in the well-regulated budget?

There's no dodging the issue, the standard of living has changed greatly. Firms that expect to make their living today should pay their employees enough so that they can live according to the standards of today. We hope that you will give us a new budget, Mr. Stewart, so that we can see ourselves, and tell the world and our employers, what it actually costs to live in modern America.

(Signed) A WORKER'S WIFE.

Union Label Campaign On

All members of organized labor and their families are urged to do their part in a union label campaign to be conducted by the union label trades department of the A. F. of L. from August 22 to September 10.

Central bodies and local unions should first make surveys to find what union labeled merchandise is carried in local shops, whether employees are members of the retail clerks' union; also bakeries, meat markets, grocery and cigar stores, restaurants, movie houses, barber shops, taxicab companies, auto repair shops and printing and bookbinding shops should be visited to find whether they are fair to organized labor, and firms employing members of the metal or building trades should receive a call to benefit these trades.

When the survey is completed the information should be given out to union men and their families through the central bodies and locals so they may refuse to patronize unfair firms. Union label leagues should be formed, or if already formed, given encouragement, meetings held, literature distributed and news of the campaign sent to labor papers and journals.

The word "omnipotent" is a relic of the time when God was chiefly useful for military purposes.—*The Rev. J. S. Bezzant.*

Ask the Man Who Wears 'Em—He Knows Good Quality

Whenever a group of labor people or union men get together, sooner or later the conversation will turn to the question of union-label clothing and then the gathering usually gets quite informal as each man starts turning his shoes, hat and clothes inside out to show all the union labels he has in them. Anyone who believes that each trade is interested in its own welfare first, last and only, and is indifferent if not hostile to the rest of the trades ought to happen in about then, and change his opinion. One of the best symptoms of good health in the labor movement as a whole is this tendency for all crafts to stick together and boost each other.

Union men generally boost for "the label," some of them are regular label fans and have a union label in everything they wear, right down to shoes, sox and garters. In some lines it's hard to find the article you want with the label on it because

Strongly-made gloves protect the lineman's very life, many times. They're the cheapest form of insurance he can buy, and there are many good brands 100 per cent union made. Among them, these from the Illinois Glove Company, carefully reinforced at every point of wear.

manufacturers have stubbornly resisted attempts to organize and the few unionized factories haven't the money to put over their product among dealers. That is why staunch union men sometimes aren't able to "dress up" with the label on every garment, from top to toe.

But when they go to work, the label shows itself on pants, shirt, overalls, cap, shoes and practically everything else. Not only because they want union-made goods but also because work clothes with the label are actually easier to buy in the stores and are so splendidly made and good-looking, as you can see at a glance from the photographs in this second "Fashions for Men."

Now, wives, don't think that because this is men's clothes you ought to pass over these pages. We certainly want your interest because we know from experience that wives do most of the family buying.

You won't have any difficulty in finding union made work clothes because through quality alone they have created a market for themselves even among people who don't care a rap about the union label and probably wouldn't know what it was if they saw it. There is such a demand for these good work clothes that the stores have to carry them in stock. The finest quality work clothes on the market are those with the label.

One reason they are in demand is because they give such exceptionally good service. You housewives know that it's not always economy to buy the article at the lowest price, in fact you often find that the best, though higher priced, is the cheapest in the long run because it will outwear the low priced article two or three times over. This is particularly true of work clothes, they have to stand such a lot of hard knocks. Did you ever test for yourself how many times a pair of overalls would come back from the laundry, fresh and smiling, buttons all there, seams and stitching firm? It just seems that the manufacturers of these clothes have made innumerable tests to find out where the wear shows first, and to make that spot doubly strong. You'll find the clothes with the label are the sturdiest you can buy at any price.

Appearance counts, too. We women certainly know that a fine-looking garment is **worth** more than one of poor or shoddy appearance. That counts with the man on the job, too. As Bachie puts it, "the fellow with the front gets the job," and frequently an employer has to size up a group of men almost entirely by their appearance in which case trim work clothes would not fail to make their impression. And don't you think a craftsman who takes pride in his work also takes some pride in looking as neat as the job he turns out? Take another look at the pictures on the opposite page. Wouldn't you say these clothes are good-looking?

If she understood conditions in the field of manufacturing, no true wife of a union man would buy her husband a work garment that did not have the union label. Garment workers have been fighting for years, not only to establish the closed shop but to put the label on their products. In dress clothes, hosiery, underwear, etc., frequently there are products made by union workers but who have not been strong enough to put the label on the merchandise. With work clothes it is different. Here long-established firms pride themselves on their many years of fair dealings with organized labor and put the union label in a prominent place not only on their goods but in their advertising. You can be pretty positive whether a work garment is union made or not if you'll look for the label.

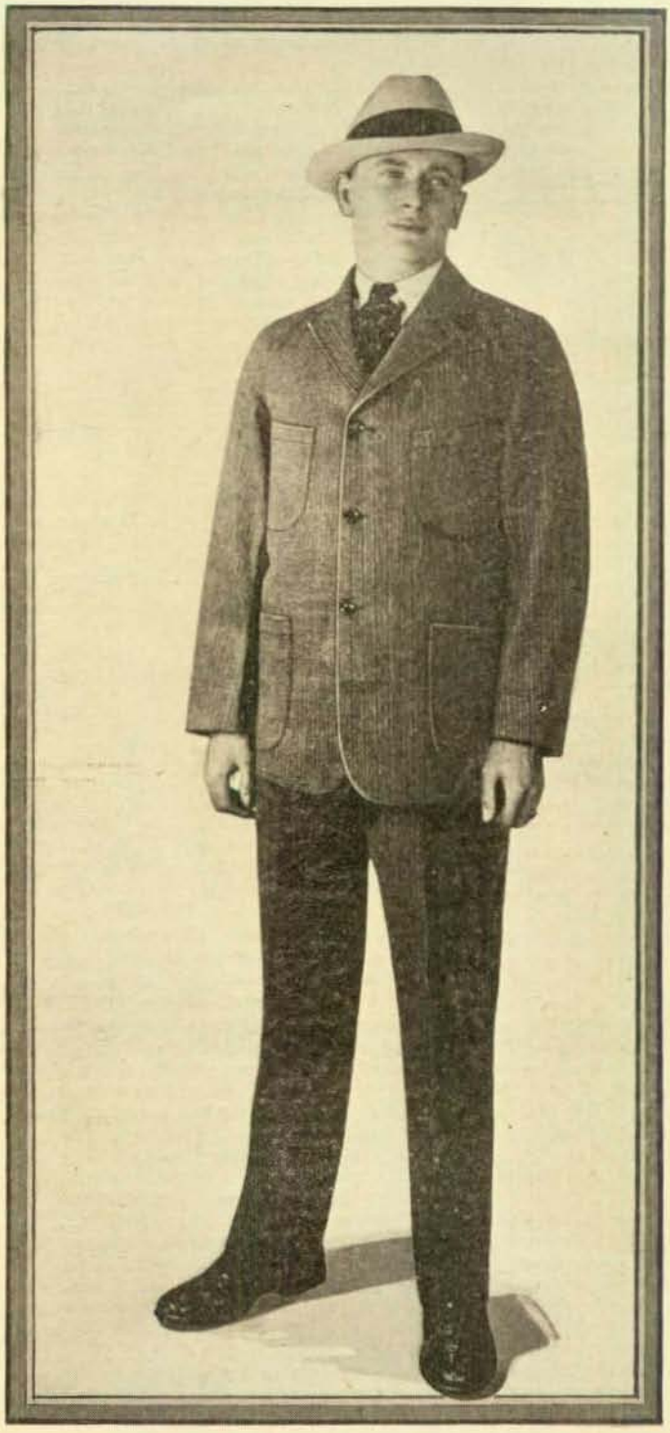
There's something questionable about work clothes without the label, just as union men are apt to feel there is something questionable about the "card man" who wears them. Shirts and overalls are turned out in quantities at prison factories by manufacturers who lease the labor of convicts. Kate O'Hare, who saw the inside of the prisons, tells of the appalling sweatshop conditions there. Contrast this with the cleanness, sanitation and fair treatment of the union shop! If you buy a shirt without the union label you have no way of knowing whether it came from a prison or not, in fact you may be fairly sure it did, for the prison shop is the chief competitor of the fair union factory and a foul competitor it is. You get sanitation as well as the fair shop when you insist on the union label.

Your own stores probably carry the very garments you see in the pictures here, for all of these brands are nationally known and widely distributed. While we are not boosting any particular brand these are among the leaders in the field and all of them 100 per cent fair to organized labor. Look for them in your shops, and the other good work clothes with the union label!

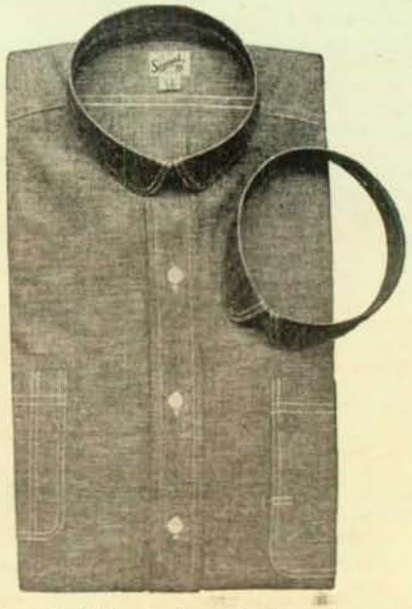
UNION LABEL FASHIONS FOR MEN

New Type Work Clothes

For the Well-dressed Man on the Job



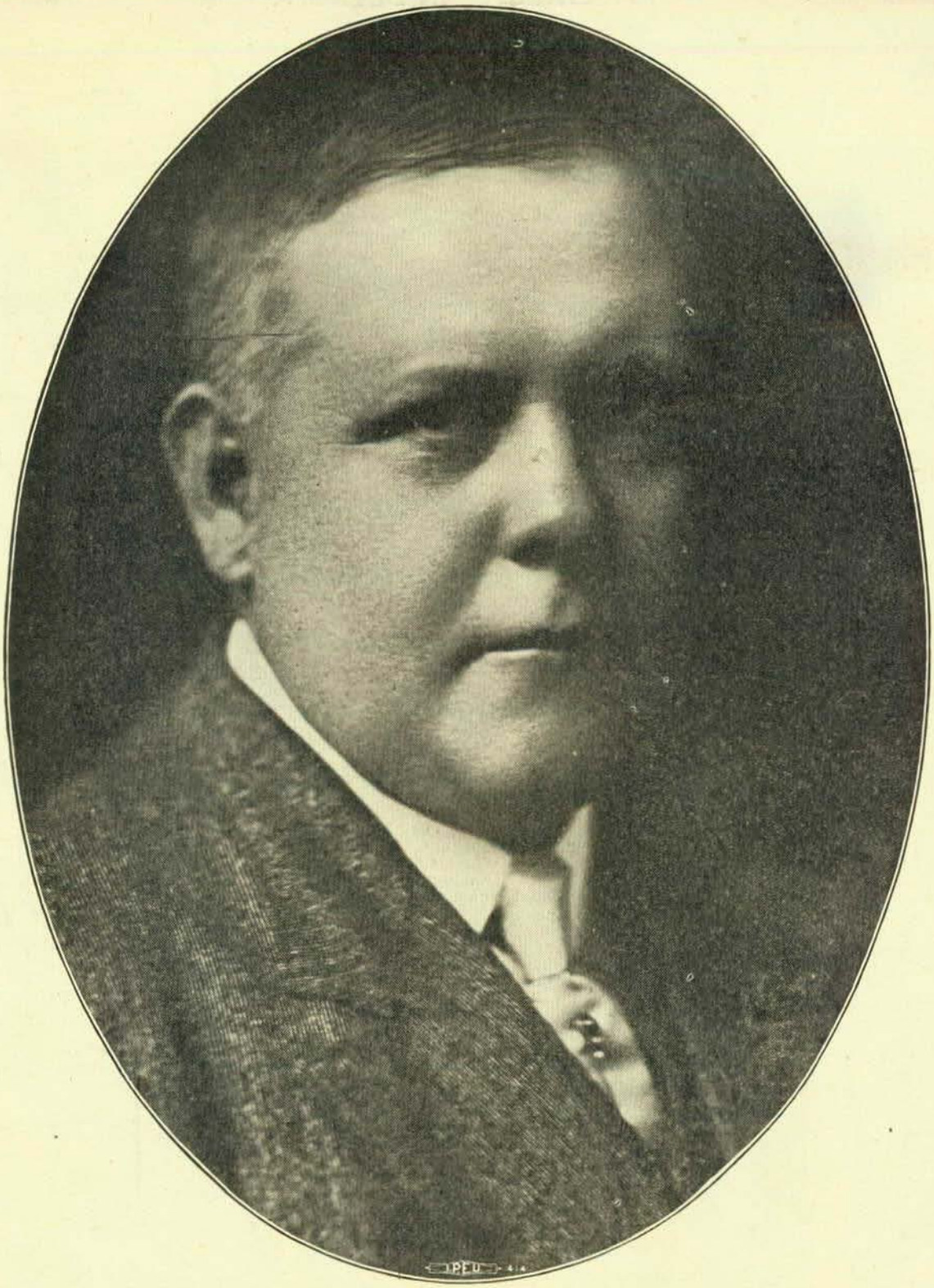
A new idea in work clothes, like a well-cut, trimly tailored business suit. To, from, and on the job it demonstrates good looks and sturdy serviceability. Wire patchers should look into this! From the Sweet-Orr Company.



A work shirt may be as finely made as a dress shirt, say designers in the Signal Shirt Company plant. Here it is, of Tub-Test denim, complete with two matching collars.

Ready for strenuous service, this neat work suit of overalls with coat to match; comfortably cut and tailored as only union workers know how to do it! From W. M. Finck and Co.

The Vestbak overall (below) has a special cut to insure comfortable fit and prevent slipping on the shoulders. The wide back protects the shirt underneath. Made by the Oshkosh Overall Co.



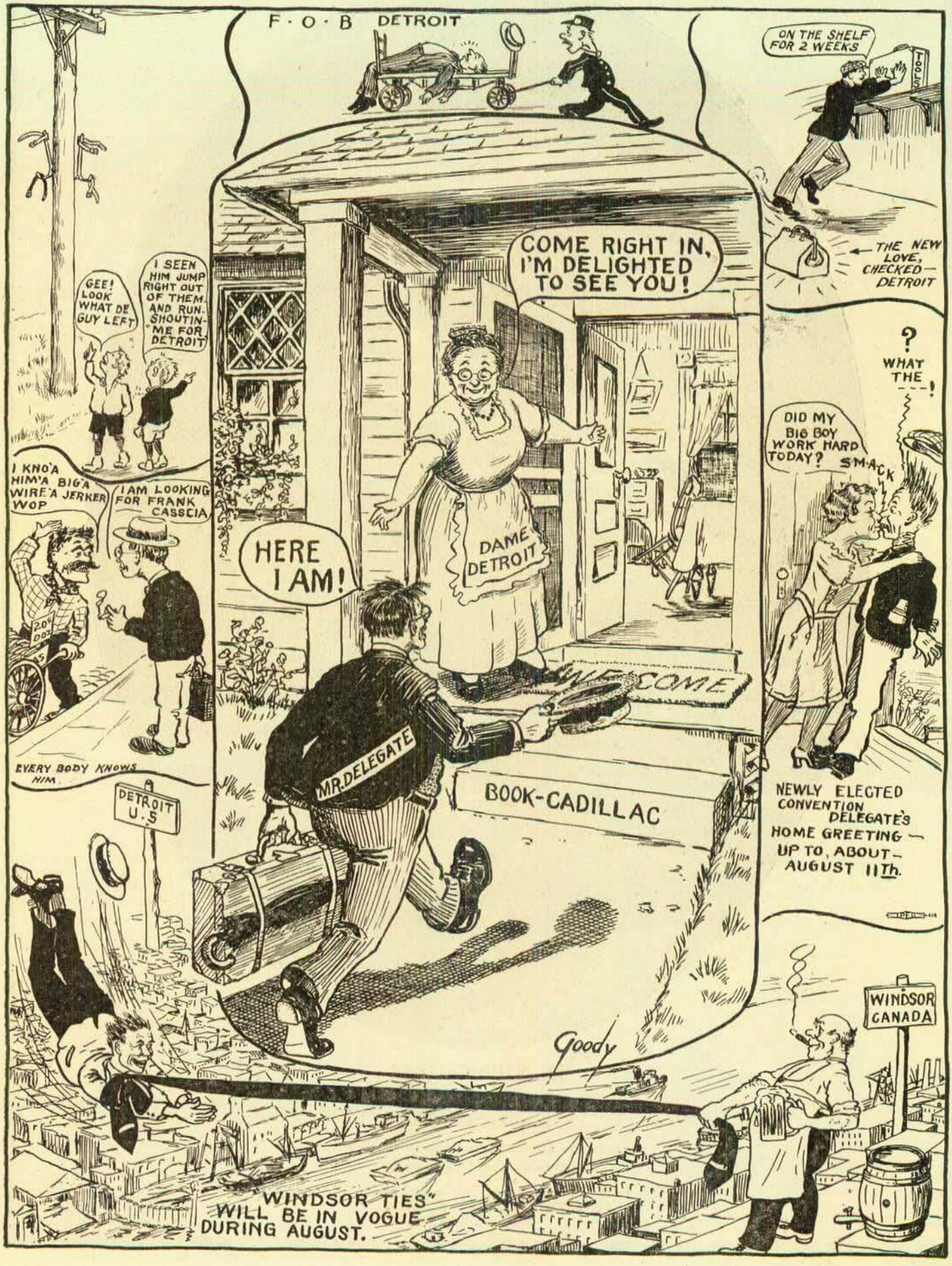
IN MEMORIAM

FRANK J. McNULTY
President Emeritus

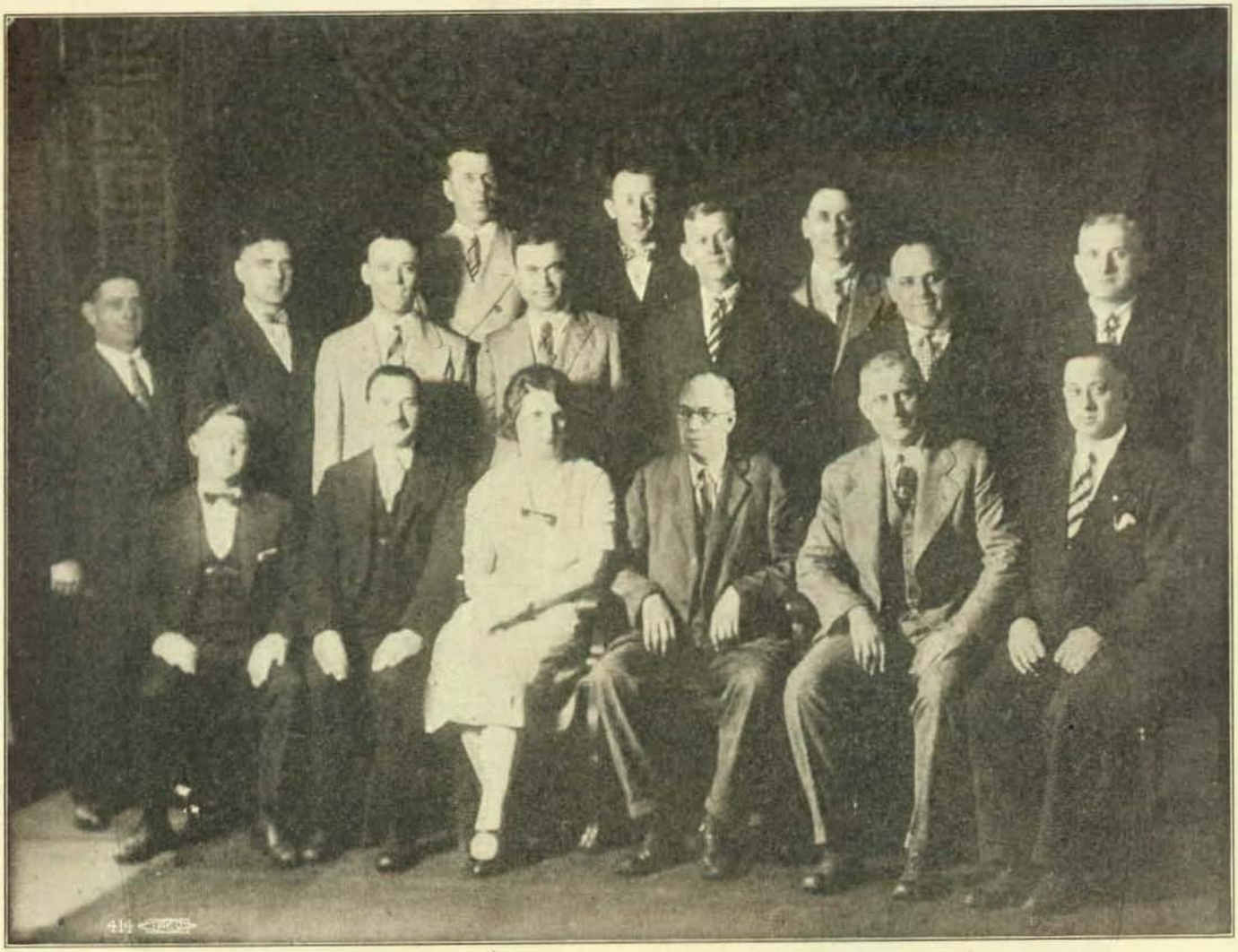
Chairman, International Executive Board
International President

Born Londonderry, Ireland, August 10, 1872; Died Newark, N. J., May 26, 1926.

HOT CIRCUITS IN DETROIT!



DETROIT CONVENTION COMMITTEE



Top Row Standing Left to Right: Robert Clarke, George Hope, John Boyle; 2nd Row Standing Left to Right: H. S. Lenehan, Claude Audette, Edward Aspinal, James Barry, E. J. Lyon, Frank Caccia, Gustave Denske; 1st Row Sitting Left to Right: William Frost, secretary; Joseph Barso, treasurer; Hazel Kopacz, Harvey Watson, chairman; A. P. Dueweke, James Fernie.

Labor Sunday, Message 1927

(Prepared by the Commission on the Church and Social Service of the Federal Council of the Churches of Christ in America, for use on Labor Sunday, September 4, 1927.)

The church and labor hold many common ideals. The gospel of Jesus, the carpenter, which is the foundation of the Christian church, rests upon the love of God, who is the Father, and the service of all men, who are brothers. The social ideals of labor rest upon the essentially religious principles of service and sacrifice, of creative work, of brotherly friendliness, and of social justice. In the support of these common ideals labor and the church stand together.

On this Sunday, devoted to the cause of labor, it is appropriate for every church to reaffirm its support and allegiance to the common moral issues to which both labor and religion are committed. The church holds that human personality is sacred, and opposes all forms of exploitation and human degradation. It protests against the employment of children of tender years in denial of their right to growth and education, and the employment of men and women for overlong periods of labor. It stands for the payment of wages sufficient both to sustain and to enhance life, the right of workers to bargain collectively through representatives of their own choosing, and protection against unemployment and occupational accidents and diseases.

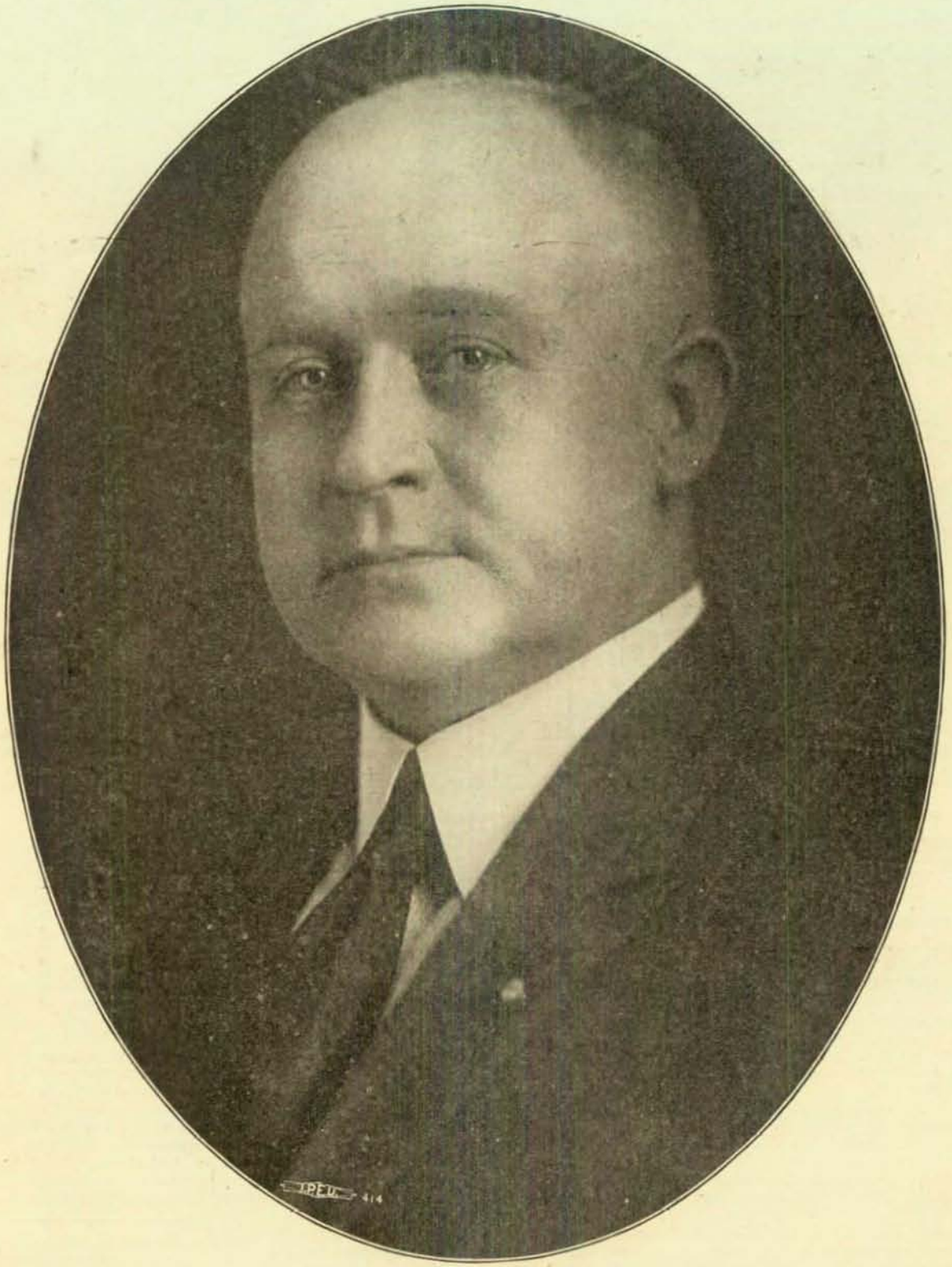
It is fitting, too, that every church should continually affirm its belief in the application of the principles of Jesus in every industrial relation. The spirit of good-will expressed in advancing forms of industrial co-operation can reconcile the differences between management and men, and eliminate the human and material wastes of conflict. That these statements are not vague ideals, but are actual programs coming to pass, is shown by the proposals of the American Federation of Labor for co-operation with management to increase efficiency and production, and by the growing number of instances where labor and management are actually working together for these same purposes.

Unceasing concern for the lot of the workers, their wives and children, is the inevitable expression by the churches of that love which led Christ to turn to the multitudes and to become the passionate advocate of their welfare. The labor movement is the self-conscious organized expression of the workers' struggle for a more abundant life. It is impossible for the church of Christ to devote itself passionately to the welfare of the masses of the people and not to have sympathetic relations with organized labor. This does not mean that the church should become partisan, but rather that it must fulfill the commands of Christ in expressing His intense human interest. In fact the church has a right to expect the support of its members, in principle at least, in its efforts to lift the status of the under-privileged. In striving for the better life for them the church finds itself touching elbows with labor, and they together may perform a great service in the promotion of a more just and brotherly order in America.

Acting can safely be called one of the arts, but, then, so are accounting, law and plumbing.—*Elizabeth Risdon.*

The worst and most dangerous way of being right is to consider all the rest of the world to be wrong.—*Louis de Launay.*

If we could manage first to get rid of the poisonous effect of *amour propre* we should reduce the causes of international conflicts to economic competition.—*Premier Painleve.*



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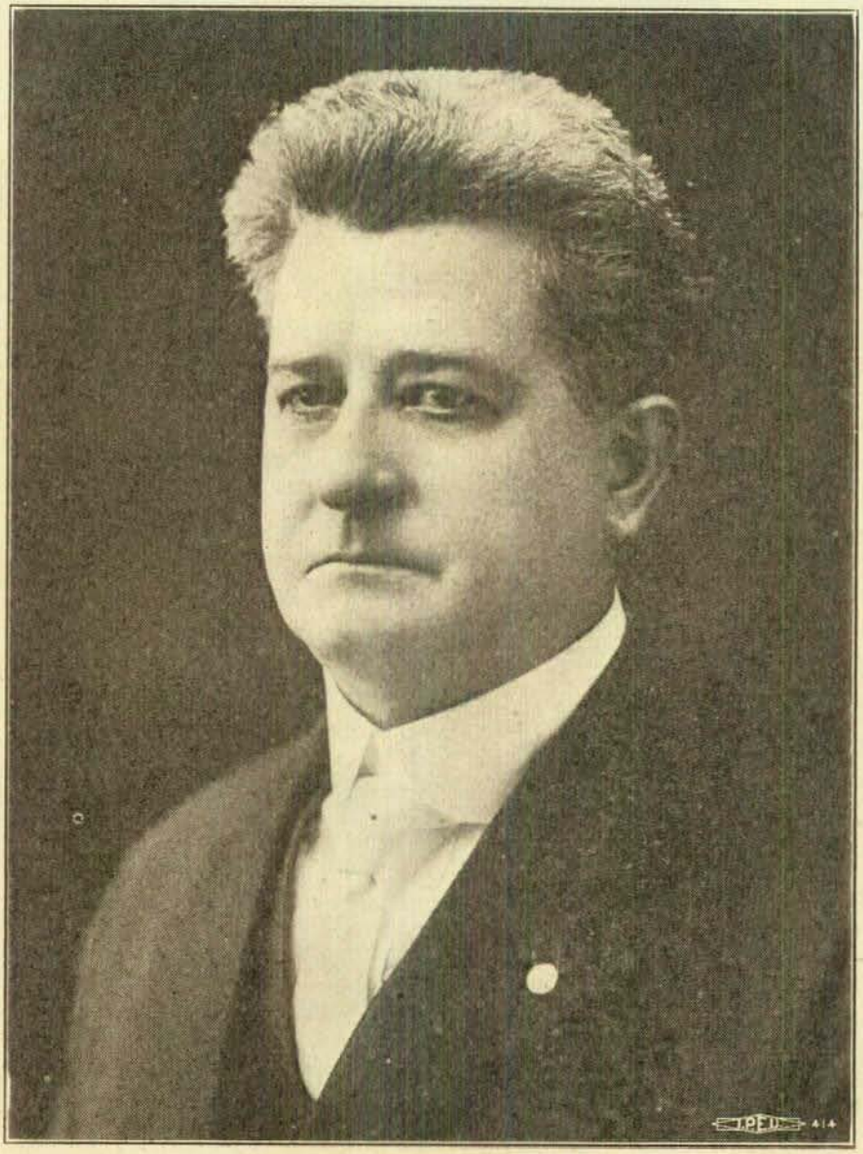
INTERNATIONAL SECRETARY BUGNIAZET



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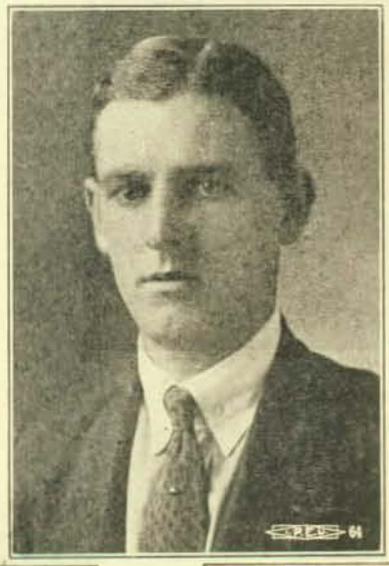

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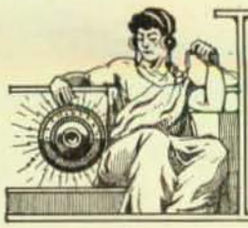
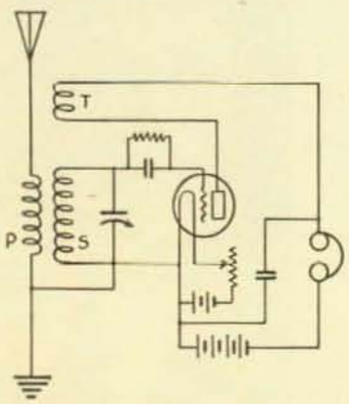


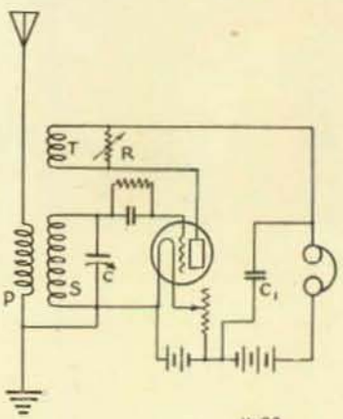
RADIO

Regeneration Control

Edited by JOHN M. CLAYTON

AT the left of the illustration is shown the standard "tickler feedback" receiver in which regeneration in the detector tube is controlled entirely by means of the position of the tickler coil T with respect to the secondary coil S. This system has been more or less standard for a number of years and is still to be found in various receivers used today. It has several disadvantages,

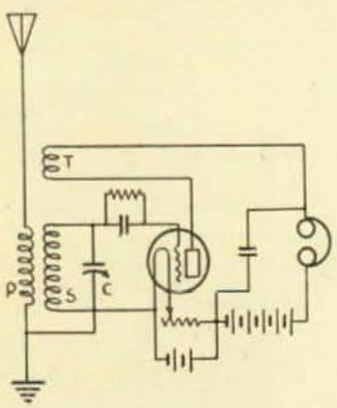


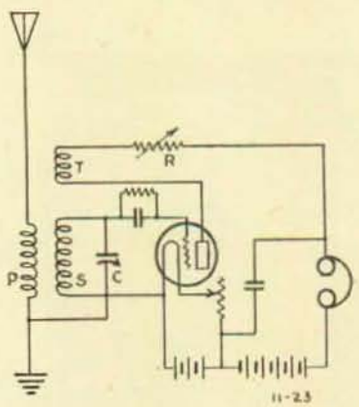


11-22

however. In the first place, unless the tickler is made quite small as compared to the secondary, the tuning effect upon the secondary when the tickler is rotated is quite marked. A retuning of the incoming signal is necessary with each change of the tickler—a thing not to be desired. In the second place, the mounting for the tickler provides certain mechanical difficulties that cannot be overcome easily in home construction.

To the right of the figure is shown a system of regeneration control in which the tickler is fixed. Its position with respect to the secondary is never changed. Across the tickler is shunted a variable resistance R. This resistance should have a maximum value of several hundred ohms. The carbon compression type of potentiometer is ideal for use here.





11-23

In fixing a tickler of this type it is so adjusted that the set oscillates easily without any resistance across the tickler when the secondary tuning condenser is set at maximum. As the secondary tuning condenser is varied toward its minimum capacity the value of the resistance R will have to be increased in order to prevent oscillation and maintain regeneration.

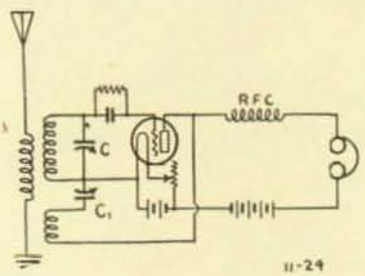
Condenser C is the secondary tuning condenser and condenser C1 the telephone and B battery by-pass condenser. C1 has a capacity of .001 or .002 mfd and C a capacity of .00025 or .0005 mfd for broadcast wavelengths.

The scheme of series resistance control is shown in the diagram below, to the right. It is shown in comparison with the standard tickler feedback in which the tickler T is rotated nearer to or away from the coil S, the secondary.

This system has quite the same operating characteristics of the scheme shown above in which the resistance is shunted across the tickler, instead of being in series with it. The resistance control method has the advantage that the regeneration control has little or no effect upon the tuning. That means that when you tune in on a distant station and vary the regeneration by means of a variation in the resistance you do not affect the tuning at all and do not have to make any compensating adjustment in the secondary tuning condenser as the feedback control is changed. It greatly improves the ease with which one can tune in a weak signal.

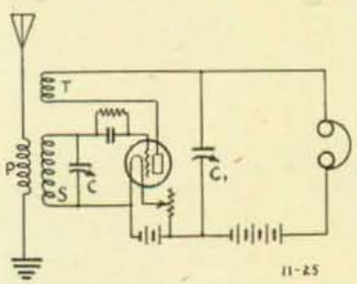
The resistance should have a maximum value of 2,000 ohms. The carbon compression type of potentiometer fills the bill adequately. Of course very great changes in the setting of the tuning condenser will require a resetting of the resistance value, although these changes are not as great or as often as are required in the standard tickler (variable) scheme shown at the left of the illustration.

The Weagant method of regeneration, popularized and improved upon by Reinartz, is the next. The hook-up of a Weagant regeneration control is shown in our illustration below. The tickler and secondary coils are wound on the same form. In fact, the tickler is merely a continuation of the secondary, a tap being taken off for the connection to the filament circuit. Regeneration is controlled by the variable condenser C1 whose capacity should be about the same as the secondary tuning condenser C.



11-24

In this circuit the radio frequency choke coil R. F. C. keeps any radio frequency from passing through the headset and B battery. The whole purpose of this form of regeneration would be defeated if any radio frequency gets through the headset circuit. With many headsets the impedance of the headset is such that it acts as an effective choke. When an audio frequency amplifier is used, in many cases it, too, will cut off any radio frequency that might be flowing through the B battery.



11-25

If you have a receiver of this type and it will not oscillate, the insertion of the radio frequency choke will probably clear the trouble. The choke can be wound with very fine wire—No. 30 to No. 36 d. c. c.—and should (for broadcast reception) contain 200 to 250 turns on a form an inch in diameter.

The variable by-pass condenser method of regeneration and oscillation control is the last to be described. This method utilizes a variable condenser connected across the headset and B battery. The tickler's position is fixed once and for all. The by-pass condenser C1 will have a capacity of .0005 mfd for broadcast reception. Its purpose is

(Continued on page 446)

CONSTRUCTIVE HINTS

Induction Voltage Regulators

The voltage of a generator or a number of generators may be automatically maintained at normal for all conditions of load at the station bus bars or at any center of distribution of the system by means of a generator voltage regulator. Where there are a number of feeders radiating from a station this method of regulation, however, will not be satisfactory unless all of the feeders are laid out for negligible voltage drop, which generally is uneconomical. Usually the feeders are of different lengths and the power demands occur at different intervals, so that the voltage delivered at the centers of the several feeders will vary widely. Recording volt meter charts taken at frequent intervals at various points on each feeder provide a means for detecting voltage irregularities in the feeder, which, if not corrected, may become magnified and not only impair the service but appreciably affect the revenue. By providing a means for regulating the voltage of the individual feeders, economies also may be effected in feeder installation costs by the selection of a small size conductor for the initial installation or for extending existing feeders. Furthermore, by maintaining normal voltage at the center of distribution, it is oftentimes possible to increase the load on the feeders without making it necessary to reinforce or to replace the existing lines. Voltage regulation may be provided to meet the varying conditions of load and also to provide for possible economies in the selection of size of conductors for the feeders by the installation of properly selected induction voltage regulators.

Band Steel Armored Cable

Band steel armor consists of a double taping of mild band steel betwen two wraps of asphalted jute. The inner wrap of jute acts as a cushion between the cable and the armor and, with the asphalt compound protects against corrosion. The two tapings of band steel are applied in the same direction, the outer tape covering the joints between the turns of the inner tape. This construction insures the greatest flexibility and prevents openings in the armor when the cable is bent. The final wrap of asphalted jute protects the armor from corrosion. The completed cable is run through whitening to prevent the turns from sticking together when the cable is reeled.

Rules for Lead Storage Batteries

1. Be sure the electrolyte is free from injurious impurities.
2. Keep the electrolyte well above tops of plates.
3. Maintain the specific gravity of the electrolyte at the density specified by the manufacturers of the battery.
4. Do not let the density of the electrolyte in any cell differ from the standard density more than 0.05. Thus a cell having normal density of 1.200 must register above 1.205 and below 1.195 when fully charged. Test each cell with hydrometer once a week at least.
5. Keep cells cleaned out and remove sediment when it has deposited metal near the lower edges of the plates.
6. Be sure separators are all in place and in good order.
7. Note any evidences of tank leakage and correct at once.
8. Maintain insulation of cells from ground and from each other.
9. Begin charge immediately after the end of discharge or as soon thereafter as practicable.
10. Do not continue charge after the negative plates begin to give off gas, except the occasional (boiling) to be mentioned later.
11. Never let charging current fall below the eight hour rate except towards the end of the charge, and,
12. Stop discharge when the battery potential falls to 1.75 volts per cell with the normal current; 1.70 per cell discharging at the four hour rate or 1.60 volts per cell discharging at the 1 hour rate.
13. Watch the colors on the plates and if they begin to grow lighter treat at once for removal of sulphate.
14. Give the battery a prolonged overcharge about once a month. This overcharge should continue at about 60 per cent of the eight hour rate until free gassing of the negative plates has continued for one hour.
15. Never let the battery temperature rise above 110 degrees Fahrenheit, and, if possible, keep below 110 degrees Fahr.
16. Test each cell once a week with a cadmium electrode and a low reading voltmeter to determine the condition of the negative plates.
17. Test the cells occasionally for drop on discharge; excessive drop indicates the presence of sulphate, and if the drop increases the amount of sulphation is also increasing.
18. When one of a series of cells is sulphated, charge it as usual in series with the others on discharge. Cut the cell out, connecting the open circuit by a heavy wire joining the two cells adjacent to the sulphated one. Be careful not to short circuit the latter cell. When discharge is ended, remove connector and switch in the sulphated cell so that it again receives a charge. Repeat this process until the cell has had its sulphate fully reduced. A double pole, double throw switch is conveniently used to switch the cell and the connector alternately into and out of the circuit. With it the cell may be allowed to discharge a short time before cutting out which improves the treatment.
19. Cells which stand a considerable time unused, say as long as 45 days, should work in a low density electrolyte not exceeding 1.210 specific gravity and be overcharged as directed in 18. It is better to give them a slight discharge and charge about once a week if practicable.
20. Cells which are to be idle two months or more should be taken out of commissions by first fully charging and then discharging for two hours at the normal rate. Then draw off the electrolyte and fill the cells with pure water, preferably distilled. Begin the discharge at the normal rate. The cells will have to be practicably short circuited to produce this discharge in the water. When the discharge has been carried to a point at which the voltage is about 0.5 volt per cell, the water is poured out of the jars and the plates washed thoroughly by putting a hose in the jar and flowing the water over the plates. Allow the water which fills the jars at the end of the washing to remain 24 hours; then pour out and allow the electrodes to dry. When the battery is to be used again pour in electrolyte and give a prolonged overcharge.

Electrical Compressors

Motor-driven centrifugal air compressors have been successfully used for the following service:

Oil burning furnaces
Gas burning furnaces
Pulverized coal furnaces
Aeration and agitation of liquids
Foundry cupola blowing
Ash and coal conveying
Grain conveying
Cash conveying
Mail conveying
Water gas generator blowing
Blast furnace blowing
Bessemer steel converter blowing
Copper blast furnace blowing
Gas boosting
Gas exhausting

Large Power Transformer

During the past ten or fifteen years the average capacity of large power transformers, i. e., those above 500 kv-a., has increased considerably as has also the operating voltage. These facts have radically changed the design problems of the transformer engineer from those encountered a decade or more ago. Within the same period transmission systems have increased both in size and voltage and become much more complicated. This, with the present tendency toward the interconnection of systems, has made available at any point of the circuit tremendous power compared with the unit capacity of the average transformer, and away beyond that existing or even contemplated a few years ago. As a result the problem of building large transformers to withstand short circuit forces under sustained primary voltage, and without external reactance has added to the fundamental problems of design. Transformers for electric furnace work are subjected to very severe shocks due to frequent and sudden overloads.

The addition of oil to high voltage transformers is to prevent moisture from entering and causing damage. A transformer is no better than its insulation, for upon this material depends not only the safety and reliability of the apparatus alone, but the life and property of the user of electrical appliances.

Large power companies use transformer oil dryers and filters to test their oil and keep it up to the proper standard.

Cycle

A cycle is one complete set of values or changes in both directions. The number of cycles completed in one second is called the frequency. In the United States the frequencies used for distribution of current for motors, lights and heating appliances have been standardized at 60 cycles or 25 cycles per second.

EVERYDAY SCIENCE

Arsenic

Arsenic is generally found in nature combined with sulphur, associated with iron and copper. The ore is roasted, forming arsenious oxide which is then reduced with carbon. Arsenic is added to lead in the manufacture of shot, the melted alloy of lead and arsenic is dropped from a height through a strainer or colander into water. The arsenic lowers the melting point of lead and makes it more fluid, so that the shot becomes spherical before cooling. The arsenic also makes the shot harder than pure lead.

Radium and Radioactivity

In 1896 the French chemist Becquerel, while investigating the penetrating powers of the rays emitted by phosphorus substances, happened to leave a compound uranium spread out on a thick paper that enclosed a photographic plate. At the end of four weeks it was found that the plates had been affected by the rays which had issued from the uranium compound, and which had penetrated the thick paper that inclosed the plate. Investigation showed that the result was in no way connected with the phosphorescent properties of the substance, since identical effects were observed whether the uranium compound was in a phosphorescent state or not. It appeared that the substance continuously gave off rays which produced photographic and electrical effects without itself being changed in the process. This half-accidental discovery of Becquerel led to investigations which have marked an important era in the history of science. The term radioactivity was given to effects like those produced by uranium compounds.

Water as Medicine

A person should drink an abundance of water as it has a cleansing effect on the body. If taken before eating it cleans out and washes the stomach. Water also dilutes the blood, assisting in carrying off waste matter, such as uric acid.

There are many so-called mineral waters which, it is claimed, have curative values because they contain certain salts and chemicals. In most cases where people have been cured by drinking such waters it is probably because of the air, exercise, and outdoor life which they have at the famous springs or seashore resorts. Many of these waters are no better than good, clear drinking water.

Some water which is bottled and sold to the public as coming from certain springs is merely ordinary water, obtainable in any locality, to which has been added Glanker's salt, Epsom salt, common salt, etc.

Bath Tubs

When bath tubs were first introduced into the United States, back in 1840, they met with a great deal of opposition. Newspapers wrote articles condemning them. Politicians made eloquent speeches against their use, and even doctors held them up as dangerous to health. The State of Virginia in 1843 put a yearly tax of $30 on every bath tub, and a Boston municipal ordinance made the use of them unlawful, except when ordered by a doctor. Times have changed, and bath tubs are in popular use in Virginia and Boston without any legal restraint.

Illumination

The following types of illumination used with the following effects give some hints as to why materials have different colors under different lights·

Illuminant	Color
Sun (high in sky)	White
Sun (near horizon)	Orange red
Skylight	Very bluish white
Electric arc (short)	White
Electric arc (long)	Bluish white to violet
Flame arc	Commonly yellow
Mercury arc	Bluish green
Nernst lamp	Yellowish white
Tungsten lamp	Yellowish white
Incandescent carbon	Yellowish
Incandescent below voltage	Orange to red
Acetylene flame	Yellowish white
Welsbach light	Yellow to green
Gaslight (Siemans burner)	Whitish yellow tinge
Gaslight (ordinary)	Yellow to pale orange
Kerosene lamp	Yellow to pale orange
Candle	Orange yellow

Acetylene Gas

In 1895 Chatelier found that when acetylene was burned with an equal volume of oxygen gas, a temperature was obtained nearly 2,000 degrees higher than that of oxy-hydrogen flame; and it was suggested that the use of acetlyene in blow pipes would be of great value in the production of high temperatures in the laboratory. A few years later such blow pipes were applied industrially for oxy-acetylene welding of metals, and they are now used in thousands of workshops for this purpose. There is not a stage in this story of the application of a substance to the service of man but is directly dependent upon laboratory studies in the broad field of chemistry.

How the Body Kills Germs

The little white corpuscles of the blood are useful animals. One of their functions in the blood is to kill disease germs by eating them. Sometimes the corpuscles, after swallowing the germs, are unable to digest them, and are killed by them. If this happens, the disease will become worse, and if it continues, the patient will die. If the corpuscles are strong enough to digest the germs, the person usually gets well. There is also a substance which kills germs. Every person has a sufficient quantity of this substance in his body to kill some germs, but not sufficient to overcome a great attack of germs. When disease germs enter the blood and begin to multiply very rapidly, more of this germicidal substance is manufactured and it assists the corpuscles in killing the germs. The turn of a fever comes at the time when the corpuscles and germicidal substance get the upper hand of the germs.

There is a different type of germicidal substance for every disease germ. Sometimes this germicidal substance remains in the blood for a long time after the person has recovered from the disease. Therefore, that person can never have that particular disease as long as the germicidal substance is present in the blood. Germicidal substances which destroy cold producing bacteria remain in the body so short a time that a person can "catch cold" again within a few hours of getting rid of one.

The Microscope

It took 200 years for learned men to advance from the use of "spectacles" to the first combination of lenses, to form on one hand a "telescope" and the other a "microscope." The first made "compound microscopes" or adjustment of the two lenses—an "ocular" and an "object glass" mounted in a tube, so as to give great magnifying power—were not so serviceable as a means of exploring the invisible world as were the cleverly shaped single lenses used by some naturalists.

Wrought Iron

Wrought iron is a slag-bearing iron malleable in all ranges of temperature and not appreciably hardened by sudden cooling. It is made from pig iron by the puddling process or the purification process.

The melting is done as rapidly as possible with forced fires and takes from 30 to 35 minutes. The next ten to 15 minutes constitutes the period of slag formation proper. The damper is lowered, roll-scale or high-grade iron is added and the charge is thoroughly mixed in order to bring the molten iron in contact with the oxide. The first foreign constituent is manganese.

After removal from the puddling furnace the balls of iron containing much slag are passed to a squeezer, where the slag is worked out, and then through rolls, leaving bars of malleable iron ready to use.

First Aid to Yourself

Sleep is one of the best ways of conserving our vitality. And in this conservation, sleep counts for much. Comfortable, refreshing sleep with a minimum of eight hours for every adult person every day is the safest counsel. Not five hours one day and eleven hours the next, but eight hours of sleep every day and under the best possible conditions. Go to bed before you are exhausted. Excess fatigue will keep you awake.

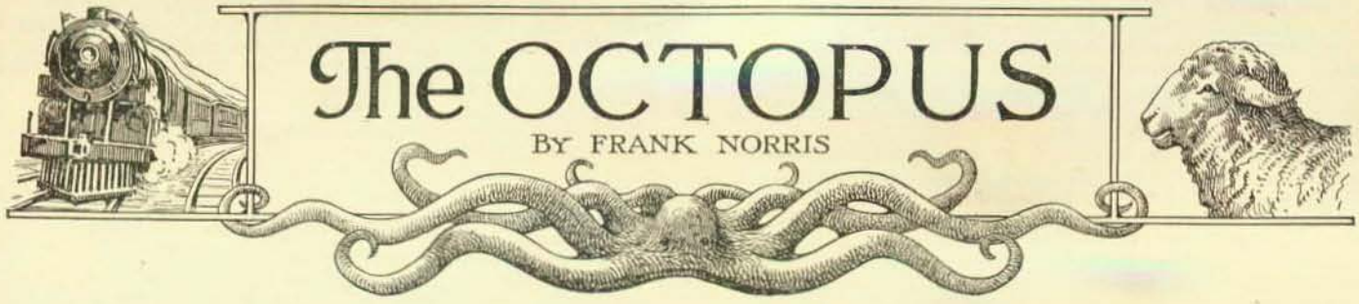
Safety First

A mechanic should have a bottle of iodine or better still a small bottle of "mercurochrome" in his tool kit to treat scratches and cuts a man is daily subject to. The "mercurochrome" combines the antiseptic value with fine liquid sealing feature. This enables a mechanic to prevent further trouble from bacteria entering the cut or scratch.

General Electric Company

In April, 1892, the General Electric Company was incorporated and it acquired at its formation all the capital stock of the Edison Electric Company, the Thompson-Houston Electric Company and the Thompson-Houston International Electric.

At the present time it is operating manufacturing plants in 42 cities in the United States. Among these, the principal factories are located at Schenectady, N. Y.; Lynn and Pittsfield, Mass.; Erie and Philadelphia, Pa.; Fort Wayne, Ind.; Harrison, Watsessing and Newark, N. J.; Cleveland, Ohio; Bridgeport, Conn., and Baltimore, Md. These plants cover approximately 2,000 acres of land, have over 25,000,000 square feet of floor space, and employ nearly 80,000 workers.



As soon as supper was over, the floor was cleared again. The guests clamoured for a Virginia reel. The last quarter of the evening, the time of the most riotous fun, was beginning. The young men caught the girls who sat next to them. The orchestra dashed off into a rollicking movement. The two lines were formed. In a second of time the dance was under way again; the guests still wearing the Phrygian bonnets and liberty caps of pink and blue tissue paper.

But the group of men once more adjourned to the harness room. Fresh boxes of cigars were opened; the seventh bowl of fertiliser was mixed. Osterman poured the dregs of a glass of it upon his bald head, declaring that he could feel the hair beginning to grow.

But suddenly old Broderson rose to his feet.

"Aha," he cackled, "*I'm* going to have a dance, I am. Think I'm too old? I'll show you young fellows. I'm a regular old *rooster* when I get started."

He marched out into the barn, the others following, holding their sides. He found an aged Mexican woman by the door and hustled her, all confused and giggling, into the Virginia reel, then at its height. Every one crowded around to see. Old Broderson stepped off with the alacrity of a colt, snapping his fingers, slapping his thigh, his mouth widening in an excited grin. The entire company of the guests shouted. The City Band redoubled their efforts; and the old man, losing his head, breathless, gasping, dislocated his stiff joints in his efforts. He became possessed, bowing, scraping, advancing, retreating, wagging his beard, cutting pigeons' wings, distraught with the music, the clamour, the applause, the effects of the fertiliser.

Annixter shouted:

"Nice eye, Santa Claus."

But Annixter's attention wandered. He searched for Hilma Tree, having still in mind the look in her eyes at that swift moment of danger. He had not seen her since then. At last he caught sight of her. She was not dancing, but, instead, was sitting with her "partner" at the end of the barn near her father and mother, her eyes wide, a serious expression on her face, her thoughts, no doubt, elsewhere. Annixter was about to go to her when he was interrupted by a cry.

Old Broderson, in the midst of a double shuffle, had clapped his hand to his side with a gasp, which he followed by a whoop of anguish. He had got a stitch or had started a twinge somewhere. With a gesture of resignation, he drew himself laboriously out of the dance, limping abominably, one leg dragging. He was heard asking for his wife. Old Mrs. Broderson took him in charge. She jawed him for making an exhibition of himself, scolding as though he were a ten-year-old.

"Well, I want to know!" she exclaimed, as he hobbled off, dejected and melancholy, leaning upon her arm. "Thought he had to dance, indeed! What next? A gay old grandpa, this. He'd better be thinking of his coffin."

It was almost midnight. The dance drew towards its close in a storm of jubilation. The perspiring musicians toiled like galley slaves; the guests singing as they danced.

The group of men reassembled in the harness room. Even Magnus Derrick condescended to enter and drink a toast. Presley and Vanamee, still holding themselves aloof, looked on, Vanamee more and more disgusted. Dabney, standing to one side, overlooked and forgotten, continued to sip steadily at his glass, solemn, reserved. Garnett of the Ruby rancho, Keast from the ranch of the same name, Gethings of the San Pablo, and Chattern of the Bonanza, leaned back in their chairs, their waistcoats unbuttoned, their legs spread wide, laughing—they could not tell why. Other ranchers, men whom Annixter had never seen, appeared in the room, wheat growers from places as far distant as Goshen and Pixley; young men and old, proprietors of veritable principalities, hundreds of thousands of acres of wheat lands, a dozen of them, a score of them; men who were strangers to each other, but who made it a point to shake hands with Magnus Derrick, the "prominent man" of the valley. Old Broderson, whom every one had believed had gone home, returned, though much sobered, and took his place, refusing, however, to drink another spoonful.

Soon the entire number of Annixter's guests found themselves in two companies, the dancers on the floor of the barn, frolicking through the last figures of the Virginia reel, and the boisterous gathering of men in the harness room, downing their last quarts of fertiliser. Both assemblies had been increased. Even the older people had joined in the dance, while nearly every one of the men who did not dance had found their way into the harness room. The two groups rivalled each other in their noise. Out on the floor of the barn was a very whirlwind of gayety, a tempest of laughter, hand-clapping and cries of amusement. In the harness room the confused shouting and singing, the stamping of heavy feet, set a quivering reverberation in the oil of the kerosene lamps, the flame of the candles in the Japanese lanterns flaring and swaying in the gusts of hilarity. At intervals, between the two, one heard the music, the wailing of the violins, the vigorous snarling of the cornet, and the harsh, incessant rasping of the snare drum.

And at times all these various sounds mingled in a single vague note, huge, clamorous, that rose up into the night from the colossal, reverberating compass of the barn and sent its echoes far off across the unbroken levels of the surrounding ranches, stretching out to infinity under the clouded sky, calm, mysterious, still.

Annixter, the punch bowl clasped in his arms, was pouring out the last spoonful of liquor into Caraher's glass when he was aware that some one was pulling at his coat. He set down the punch bowl.

"Well, where did *you* come from?" he demanded.

It was a messenger from Bonneville, the uniformed boy that the telephone company employed to carry messages. He had just arrived from town on his bicycle, out of breath and panting.

"Message for you, sir. Will you sign?"

He held the book to Annixter, who signed the receipt, wondering.

The boy departed, leaving a thick envelope of yellow paper in Annixter's hands, the address typewritten, the word "Urgent" written in blue pencil in one corner.

Annixter tore it open. The envelope contained other sealed envelopes, some eight or ten of them, addressed to Magnus Derrick, Osterman, Broderson, Garnett, Keast, Gethings, Chattern, Dabney, and to Annixter himself.

Still puzzled, Annixter distributed the envelopes, muttering to himself:

"What's up now?"

The incident had attracted attention. A comparative quiet followed, the guests following the letters with their eyes as they were passed around the table. They fancied that Annixter had arranged a surprise.

Magnus Derrick, who sat next to Annixter, was the first to receive his letter. With a word of excuse he opened it.

"Read it, read it, Governor," shouted a half-dozen voices. "No secrets, you know." Everything above board here tonight."

Magnus cast a glance at the contents of the letter, then rose to his feet and read:

Magnus Derrick,
Bonneville, Tulare Co., Cal.

Dear Sir:

By regrade of October 1st, the value of the railroad land you occupy, included in your ranch of Los Muertos, has been fixed at $27.00 per acre. The land is now for sale at that price to any one.

Yours, etc.,
CYRUS BLAKELEE RUGGLES,
Land Agent, P. and S. W. R. R.
S. BEHRMAN,
Local Agent, P. and S. W. R. R.

In the midst of the profound silence that followed, Osterman was heard to exclaim grimly:

"*That's* a pretty good one. Tell us another."

But for a long moment this was the only remark.

The silence widened, broken only by the sound of torn paper as Annixter, Osterman, old Broderson, Garnett, Keast, Gethings, Chattern, and Dabney opened and read their letters. They were all to the same effect, almost word for word like the Governor's. Only the figures and the proper names varied. In some cases the price per acre was twenty-two dollars. In Annixter's case it was thirty.

"And—and the company promised to sell to me, to—to all of us," gasped old Broderson, "at *two dollars and a half* an acre."

It was not alone the ranchers immediately around Bonneville who would be plundered by this move on the part of the Railroad. The "alternate section" system applied throughout all the San Joaquin. By striking at the Bonneville ranchers a terrible precedent was established. Of the crowd of guests in the harness room alone, nearly every man was affected, every man menaced with ruin. All of a million acres was suddenly involved.

Then suddenly the tempest burst. A dozen men were on their feet in an instant, their teeth set, their fists clenched, their faces purple with rage. Oaths, curses, maledictions exploded like the firing of successive mines. Voices quivered with wrath, hands flung upward, the fingers hooked, prehensile, trembled with anger. The sense of wrongs, the injustices, the oppression, extortion, and pillage of twenty years suddenly culminated and found voice in a raucous howl of execration. For a second there was nothing articulate in that cry of savage exasperation, nothing even intelligent. It was the human animal hounded to its corner, exploited, harried to its last stand, at bay, ferocious, terrible, turning at last with bared teeth and upraised claws to meet the death grapple. It was the hideous squealing of the tormented brute, its back to the wall, defending its lair, its mate and its whelps, ready to bite, to rend, to trample, to batter out the life of The Enemy in a primeval, bestial welter of blood and fury.

The roar subsided to intermittent clamour, in the pauses of which the sounds of music and dancing made themselves audible once more.

"S. Behrman again," vociferated Harran Derrick.

"Chose his moment well," muttered Annixter. "Hits his hardest when we're all rounded up having a good time."

"Gentlemen, this is ruin."

"What's to be done now?"

"*Fight!* My God! do you think we are going to stand this? Do you think we *can?*"

The uproar swelled again. The clearer the assembly of ranchers understood the significance of this move on the part of the Railroad, the more terrible it appeared, the more flagrant, the more intolerable. Was it possible, was it within the bounds of imagination that this tyranny should be contemplated? But they knew—past years had driven home the lesson—the implacable, iron monster with whom they had to deal, and again and again the sense of outrage and oppression lashed them to their feet, their mouths wide with curses, their fists clenched tight, their throats hoarse with shouting.

"Fight! How fight? What *are* you going to do?"

"If there's a law in this land——"

"If there is, it is in Shelgrim's pocket. Who owns the courts in California? Ain't it Shelgrim?"

"God damn him."

"Well, how long are you going stand it? How long before you'll settle up accounts with six inches of plugged gas-pipe?"

"And our contracts, the solemn pledges of the corporation to sell to us first of all——"

"And now the land is for sale to anybody."

"Why, it is a question of my home. Am I to be turned out? Why, I have put eight thousand dollars into improving this land."

"And I six thousand, and now that I have, the Railroad grabs it."

"And the system of irrigating ditches that Derrick and I have been laying out. There's thousands of dollars in that!"

"I'll fight this out till I've spent every cent of my money."

"Where? In the courts that the company owns?"

"Think I am going to give in to this? Think I am to get off my land? By God, gentlemen, law or no law, railroad or no railroad, *I—will—not.*"

"Nor I."

"Nor I."

"Nor I."

"This is the last. Legal means first; if those fail—the shotgun."

"They can kill me. They can shoot me down, but I'll die—die fighting for my home—before I'll give in to this."

At length Annixter made himself heard:

"All out of the room but the ranch owners," he shouted. "Hooven, Caraher, Dyke, you'll have to clear out. This is a family affair. Presley, you and your friend can remain."

Reluctantly the others filed through the door. There remained in the harness room—besides Vanamee and Presley—Magnus Derrick, Annixter, old Broderson, Harran, Garnett from the Ruby rancho, Keast from the ranch of the same name, Gethings of the San Pablo, Chattern of the Bonanza, about a score of others, ranchers from various parts of the county, and, last of all, Dabney, ignored, silent, to whom nobody spoke and who, as yet, had not uttered a word.

But the men who had been asked to leave the harness room spread the news throughout the barn. It was repeated from lip to lip. One by one the guests dropped out of the dance. Groups were formed. By swift degrees the gayety lapsed away. The Virginia reel broke up. The musicians ceased playing, and in the place of the noisy, effervescent revelry of the previous half hour, a subdued murmur filled all the barn, a mingling of whispers, lowered voices, the coming and going of light footsteps, the uneasy shifting of positions, while from behind the closed doors of the harness room came a prolonged, sullen hum of anger and strenuous debate. The dance came to an abrupt end. The guests, unwilling to go as yet, stunned, distressed, stood clumsily about, their eyes vague, their hands swinging at their sides, looking stupidly into each other's faces. A sense of impending calamity, oppressive, foreboding, gloomy, passed through the air overhead in the night, a long shiver of anguish and of terror, mysterious, despairing.

In the harness room, however, the excitement continued unchecked. One rancher after another delivered himself of a torrent of furious words. There was no order, merely the frenzied outcry of blind fury. One spirit alone was common to all—resistance at whatever cost and to whatever lengths.

Suddenly Osterman leaped to his feet, his bald head gleaming in the lamp-light, his red ears distended, a flood of words filling his great, horizontal slit of a mouth, his comic actor's face flaming. Like the hero of a melodrama, he took stage with a great sweeping gesture.

"*Organisation,*" he shouted, "that must be our watchword. The curse of the ranchers is that they fritter away their strength. Now, we must stand together, now, *now*. Here's the crisis, here's the moment. Shall we meet it? *I call for the League.* Not next week, not tomorrow, not in the morning, but now, now, now, this very moment, before we go out of that door. Every one of us here to join it, to form the beginnings of a vast organisation, banded together to death, if needs be, for the protection of our rights and homes. Are you ready? Is it now or never? I call for the League."

Instantly there was a shout. With an actor's instinct, Osterman had spoken at the precise psychological moment. He carried the others off their feet, glib, dexterous, voluble. Just what was meant by the League the others did not know, but it was something, a vague engine, a machine with which to fight. Osterman had not done speaking before the room rang with outcries, the crowd of men shouting, for what they did not know.

"The League! The League!"

"Now, to-night, this moment; sign our names before we leave."

"He's right. Organisation! The League!"

"We have a committee at work already," Osterman vociferated. "I am a member, and also Mr. Broderson, Mr. Annixter, and Mr. Harran Derrick. What our aims are we will explain to you later. Let this committee be the nucleus of the League—temporarily, at least. Trust us. We are working for you and with you. Let this committee be merged into the larger committee of the League, and for President of the League"—he paused the fraction of a second—"for President there can be but one name mentioned, one man to whom we all must look as leader—Magnus Derrick."

The Governor's name was received with a storm of cheers. The harness room reëchoed with shouts of:

"Derrick! Derrick!"

"Magnus for President!"

"Derrick, our natural leader."

"Derrick, Derrick, Derrick for President."

Magnus rose to his feet. He made no gesture. Erect as a cavalry officer, tall, thin, commanding, he dominated the crowd in an instant. There was a moment's hush.

"Gentlemen," he said, "if organisation is a good word, moderation is a better one. The matter is too grave for haste. I would suggest that we each and severally return to our respective homes for the night, sleep over what has happened, and convene again to-morrow, when we are calmer and can approach this affair in a more judicious mood. As for the honour with which you would inform me, I must affirm that that, too, is a matter for grave deliberation. This League is but a name as yet. To accept control of an organisation whose principles are not yet fixed is a heavy responsibility. I shrink from it——"

But he was allowed to proceed no farther. A storm of protest developed. There were shouts of:

"No, no. The League to-night and Derrick for President."

"We have been moderate too long."

"The League first, principles afterward."

"We can't wait," declared Osterman. "Many of us cannot attend a meeting tomorrow. Our business affairs would prevent it. Now we are all together. I propose a temporary chairman and secretary be named and a ballot be taken. But first the League. Let us draw up a set of resolutions to stand together, for the defence of our homes, to death, if needs be, and each man present affix his signature thereto."

He subsided amidst vigorous applause. The next quarter of an hour was a vague confusion, every one talking at once, conversations going on in low tones in various corners of the room. Ink, pens, and a sheaf of foolscap were brought from the ranch house. A set of resolutions was draughted, having the force of a pledge, organising the League of Defence. Annixter was the first to sign. Others followed, only a few holding back, refusing to join till they had thought the matter over. The roll grew; the paper circulated about the table; each signature was welcomed by a salvo of cheers. At length, it reached Harran Derrick, who signed amid tremendous uproar. He released the pen only to shake a score of hands.

"Now, Magnus Derrick."

"Gentlemen," began the Governor, once more rising, "I beg of you to allow me further consideration. Gentlemen——"

He was interrupted by renewed shouting.

"No, no, now or never. Sign, join the League."

"Don't leave us. We look to you to help."

But presently the excited throng that turned their faces towards the Governor were aware of a new face at his elbow. The door of the harness room had been left unbolted and Mrs. Derrick, unable to endure the heart-breaking suspense of waiting outside, had gathered up all her courage, and had come into the room. Trembling, she clung to Magnus's arm, her pretty light-brown hair in disarray, her large young girl's eyes wide with terror and distrust. What was about to happen she did not understand, but these

men were clamouring for Magnus to pledge himself to something, to some terrible course of action, some ruthless, unscrupulous battle to the death with the iron-hearted monster of steel and steam. Nerved with a coward's intrepidity, she, who so easily obliterated herself, had found her way into the midst of this frantic crowd, into this hot, close room, reeking of alcohol and tobacco smoke, into this atmosphere surcharged with hatred and curses. She seized her husband's arm imploring, distraught with terror.

"No, no," she murmured; "no, don't sign."

She was the feather caught in the whirlwind. *En masse*, the crowd surged toward the erect figure of the Governor, the pen in one hand, his wife's fingers in the other, the roll of signatures before him. The clamour was deafening; the excitement culminated brusquely. Half a hundred hands stretched toward him; thirty voices at top pitch, implored, expostulated, urged, almost commanded. The reverberation of the shouting was as the plunge of a cataract.

It was the uprising of The People; the thunder of the outbreak of revolt; the mob demanding to be led, aroused at last, imperious, resistless, overwhelming. It was the blind fury of insurrection, the brute, many-tongued, red-eyed, bellowing for guidance, baring its teeth, unsheathing its claws, imposing its will with the abrupt, resistless pressure of the relaxed piston, inexorable, knowing no pity.

"No, no," implored Annie Derrick. "No, Magnus, don't sign."

"He *must*," declared Harran, shouting in her ear to make himself heard, "he must. Don't you understand?"

Again the crowd surged forward, roaring. Mrs. Derrick was swept back, pushed to one side. Her husband no longer belonged to her. She paid the penalty for being the wife of a great man. The world, like a colossal iron wedge, crushed itself between. She was thrust to the wall. The throng of men, stamping, surrounded Magnus; she could no longer see him, but, terror-struck, she listened. There was a moment's lull, then a vast thunder of savage jubilation. Magnus had signed.

Harran found his mother leaning against the wall, her hands shut over her ears; her eyes, dilated with fear, brimming with tears. He led her from the harness room to the outer room, where Mrs. Tree and Hilma took charge of her, and then, impatient, refusing to answer the hundreds of anxious questions that assailed him, hurried back to the harness room.

Already the balloting was in progress, Osterman acting as temporary chairman. On the very first ballot he was made secretary of the League *pro tem.*, and Magnus unanimously chosen for its President. An executive committee was formed, which was to meet the next day at the Los Muertos ranch house.

It was half-past one o'clock. In the barn outside the greater number of the guests had departed. Long since the musicians had disappeared. There only remained the families of the ranch owners involved in the meeting in the harness room. These huddled in isolated groups in corners of the garish, echoing barn, the women in their wraps, the young men with their coat collars turned up against the draughts that once more made themselves felt.

For a long half hour the loud hum of eager conversation continued to issue from behind the door of the harness room. Then, at length, there was a prolonged scraping of chairs. The session was over. The men came out in groups, searching for their families.

At once the homeward movement began. Every one was worn out. Some of the ranchers' daughters had gone to sleep against their mothers' shoulders.

Billy, the stableman, and his assistant were awakened, and the teams were hitched up. The stable yard was full of a maze of swinging lanterns and buggy lamps. The horses fretted, champing the bits; the carry-alls creaked with the straining of leather and springs as they received their loads. At every instant one heard the rattle of wheels, as vehicle after vehicle disappeared in the night. A fine, drizzling rain was falling, and the lamps began to show dim in a vague haze of orange light.

Magnus Derrick was the last to go. At the doorway of the barn he found Annixter, the roll of names—which it had been decided he was to keep in his safe for the moment—under his arm. Silently the two shook hands. Magnus departed. The grind of the wheels of his carry-all grated sharply on the gravel of the driveway in front of the ranch house, then, with a hollow roll across a little plank bridge, gained the roadway. For a moment the beat of the horses' hoofs made itself heard on the roadway. It ceased. Suddenly there was a great silence.

Annixter, in the doorway of the great barn, stood looking about him for a moment, alone, thoughtful. The barn was empty. That astonishing evening had come to an end. The whirl of things and people, the crowd of dancers, Delaney, the gun fight, Hilma Tree, her eyes fixed on him in mute confession, the rabble in the harness room, the news of the regrade, the fierce outburst of wrath, the hasty organising of the League, all went spinning confusedly through his recollection. But he was exhausted. Time enough in the morning to think it all over. But now it was raining sharply. He put the roll of names into his inside pocket, threw a sack over his head and shoulders, and went down to the ranch house.

But in the harness room, lighted by the glittering lanterns and flaring lamps, in the midst of overturned chairs, spilled liquor, cigar stumps, and broken glasses, Vanamee and Presley still remained talking, talking. At length, they rose, and came out upon the floor of the barn and stood for a moment looking about them.

Billy, the stableman, was going the rounds of the walls, putting out light after light. By degrees, the vast interior was growing dim. Upon the roof overhead the rain drummed incessantly, the eaves dripping. The floor was littered with pine needles, bits of orange peel, ends and fragments of torn organdies and muslins and bits of tissue paper from the "Phrygian Bonnets" and "Liberty Caps." The buckskin mare in the stall, dozing on three legs, changed position with a long sigh. The sweat stiffening the hair upon her back and loins, as it dried, gave off a penetrating, ammoniacal odour that mingled with the stale perfume of sachet and wilted flowers.

Presley and Vanamee stood looking at the deserted barn. There was a long silence. Then Presley said:

"Well . . . what do you think of it all?"

"I think," answered Vanamee slowly, "I think that there was a dance in Brussels the night before Waterloo."

BOOK II

I

In his office at San Francisco, seated before a massive desk of polished redwood, very ornate, Lyman Derrick sat dictating letters to his typewriter, on a certain morning early in the spring of the year. The subdued monotone of his voice proceeded evenly from sentence to sentence, regular, precise, business-like.

"I have the honour to acknowledge herewith your favour of the 14th instant, and in reply would state——"

"Please find enclosed draft upon New Orleans to be applied as per our understanding——"

"In answer to your favour No. 1107, referring to the case of the City and County of San Francisco against Excelsior Warehouse & Storage Co., I would say——"

His voice continued, expressionless, measured, distinct. While he spoke, he swung slowly back and forth in his leather swivel chair, his elbows resting on the arms, his pop eyes fixed vaguely upon the calendar on the opposite wall, winking at intervals when he paused, searching for a word.

"That's all for the present," he said at length.

Without reply, the typewriter rose and withdrew, thrusting her pencil into the coil of her hair, closing the door behind her, softly, discreetly.

When she had gone, Lyman rose, stretching himself, putting up three fingers to hide his yawn. To further loosen his muscles, he took a couple of turns the length of the room, noting with satisfaction its fine appointments, the padded red carpet, the dull olive green tint of the walls, the few choice engravings—portraits of Marshall, Taney, Field, an a coloured lithograph—excellently done—of the Grand Cañon of the Colorado—the deep-seated leather chairs, the large and crowded bookcase (topped with a bust of James Lick, and a huge greenish globe), the waste basket of woven coloured grass, made by Navajo Indians, the massive silver inkstand on the desk, the elaborate filing cabinet, complete in every particular, and the shelves of tin boxes, padlocked, impressive, grave, bearing the names of clients, cases and estates.

He was between thirty-one and thirty-five years of age. Unlike Harran, he resembled his mother, but he was much darker than Annie Derrick and his eyes were much fuller, the eyeball protruding, giving him a pop-eyed, foreign expression, quite unusual and unexpected. His hair was black, and he wore a small, tight, pointed mustache, which he was in the habit of pushing delicately upward from the corners of his lips with the ball of his thumb, the little finger extended. As often as he made this gesture, he prefaced it with a little twisting gesture of the forearm in order to bring his cuff into view, and in fact, this movement by itself was habitual.

He was dressed carefully, his trousers creased, a pink rose in his lapel. His shoes were of patent leather, his cutaway coat was of very rough black cheviot, his double-breasted waistcoat of tan couvert cloth with buttons of smoked pearl. An Ascot scarf—a great puff of heavy black silk—was at his neck, the knot transfixed by a tiny golden pin set off with an opal and four small diamonds.

At one end of the room were two great windows of plate glass, and pausing at length before one of these, Lyman selected a cigarette from his curved box of oxydized silver, lit it and stood looking down and out, willing to be idle for a moment, amused and interested in the view.

His office was on the tenth floor of the *Exchange Building*, a beautiful, tower-like affair of white stone, that stood on the corner of Market Street near its intersection with Kearney, the most imposing office building of the city.

Below him the city swarmed tumultuous through its grooves, the cable-cars starting and stopping with a gay jangling of bells and a strident whirring of jostled glass windows. Drays and carts clattered over the cobbles, and an incessant shuffling of thousands of feet rose from the pavement.

Around Lotta's fountain the baskets of the flower sellers, crammed with chrysanthemums, violets, pinks, roses, lilies, hyacinths, set a brisk note of colour in the grey of the street.

But to Lyman's notion the general impression of this centre of the city's life was not one of strenuous business activity. It was a continuous interest in small things, a people ever willing to be amused at trifles, refusing to consider serious matters—good-natured, allowing themselves to be imposed upon, taking life easily—generous, companionable, enthusiastic; living, as it were, from day to day, in a place where the luxuries of life were had without effort; in a city that offered to consideration the restlessness of a New York, without its earnestness; the serenity of a Naples, without its languor; the romance of a Seville, without its picturesqueness.

As Lyman turned from the window, about to resume his work, the office boy appeared at the door.

"The man from the lithograph company, sir," announced the boy.

"Well, what does he want?" demanded Lyman, adding, however, upon the instant: "Show him in."

A young man entered, carrying a great bundle, which he deposited on a chair, with a gasp of relief, exclaiming, all out of breath:

"From the Standard Lithograph Company."

"What is?"

"Don't know," replied the other. "Maps, I guess."

"I don't want any maps. Who sent them? I guess you're mistaken."

Lyman tore the cover from the top of the package, drawing out one of a great many huge sheets of white paper, folded eight times. Suddenly, he uttered an exclamation:

"Ah, I see. They *are* maps. But these should not have come here. They are to go to the regular office for distribution." He wrote a new direction on the label of the package: "Take them to that address," he went on. "I'll keep this one here. The others go to that address. If you see Mr. Darrell, tell him that Mr. Derrick—you get the name—Mr. Derrick may not be able to get around this afternoon, but to go ahead with any business just the same."

The young man departed with the package and Lyman, spreading the map upon the table, remained for some time studying it thoughtfully.

It was a commissioner's official railway map of the State of California, completed to March 30th of that year. Upon it the different railways of the State were accurately plotted in various colours, blue, green, yellow. However, the blue, the yellow, and the green were but brief traceries, very short, isolated, unimportant. At a little distance these could hardly be seen. The whole map was gridironed by a vast, complicated network of red lines marked P. and S. W. R. R. These centralised at San Francisco and thence ramified and spread north, east, and south, to every quarter of the State. From Coles, the topmost corner of the map, to Yuma in the lowest, from Reno on one side to San Francisco on the other, ran the plexus of red, a veritable system of blood circulation, complicated, dividing, and reuniting, branching, splitting, extending, throwing out feelers, off-shoots, tap roots, feeders—diminutive little blood suckers that shot out from the main jugular and went twisting up into some remote county, laying hold upon some forgotten village or town, involving it in one of a myriad branching coils, one of a rundred tentacles, drawing it, as it were, toward that centre from which all this system sprang.

The map was white, and it seemed as if all the colour which should have gone to vivify the various counties, towns, and cities marked upon it had been absorbed by that huge, sprawling organism, with its ruddy arteries converging to a central point. It was as though the State had been sucked white and colourless, and against this pallid background the red arteries of the monster stood out, swollen with life-blood, reaching out to infinity, gorged to bursting; an excrescence, a gigantic parasite fattening upon the life-blood of an entire commonwealth.

However, in an upper corner of the map appeared the names of the three new commissioners: Jones McNish for the first district, Lyman Derrick for the second, and James Darrell for the third.

Nominated at the Democratic State convention in the ball of the preceding year, Lyman, backed by the coteries of San Francisco bosses in the pay of his father's political committee of ranchers, had been elected together with Darrell, the candidate of the Pueblo and Mojave road, and McNish, the avowed candidate of the Pacific and Southwestern. Darrell was rabidly against the P. and S. W., McNish rabidly for it. Lyman was supposed to be the conservative member of the board, the ranchers' candidate, it was true, and faithful to their interests, but a calm man, deliberative, swayed by no such violent emotions as his colleagues.

Osterman's dexterity had at last succeeded in entangling Magnus inextricably in the new politics. The famous League, organised in the heat of passion the night of Annixter's barn dance, had been consolidated all through the winter months. Its executive committee, of which Magnus was chairman, had been, through Osterman's manipulation, merged into the old committee composed of Broderson, Annixter, and himself. Promptly thereat he had resigned the chairmanship of this committee, thus leaving Magnus at its head. Precisely as Osterman had planned, Magnus was now one of them. The new committee accordingly had two objects in view: to resist the attempted grabbing of their lands by the Railroad, and to push forward their own secret scheme of electing a board of railroad commissioners who should regulate wheat rates so as to favour the ranchers of the San Joaquin. The land cases were promptly taken to the courts and the new grading—fixing the price of the lands at twenty and thirty dollars an acre instead of two—bitterly and stubbornly fought. But delays occurred, the process of the law was interminable, and in the intervals the committee addressed itself to the work of seating the "Ranchers' Commission," as the projected Board of Commissioners came to be called.

It was Harran who first suggested that his brother, Lyman, be put forward as the candidate for this district. At once the proposition had a great success. Lyman seemed made for the place. While allied by every tie of blood to the ranching interests, he had never been identified with them. He was city-bred. The Railroad would not be over-suspicious of him. He was a good lawyer, a good business man, keen, clear-headed, far-sighted, had already some practical knowledge of politics, having served a term as assistant district attorney, and even at the present moment occupying the position of sheriff's attorney. More than all, he was the son of Magnus Derrick; he could be relied upon, could be trusted implicitly to remain loyal to the ranchers' cause.

The campaign for railroad commissioner had been very interesting. At the very outset Magnus's committee found itself involved in corrupt politics. The primaries had to be captured at all costs and by any means, and when the convention assembled it was found necessary to buy outright the votes of certain delegates. The campaign fund raised by contributions from Magnus, Annixter, Broderson and Osterman was drawn upon to the extent of five thousand dollars.

Only the committee knew of this corruption. The League, ignoring ways and means, supposed as a matter of course that the campaign was honorably conducted.

For a whole week after the consummation of this part of the deal, Magnus had kept to his house, refusing to be seen, alleging that he was ill, which was not far from the truth. The shame of the business, the loathing of what he had done, were to him things unspeakable. He could no longer look Harran in the face. He began a course of deception with his wife. More than once, he had resolved to break with the whole affair, resigning his position, allowing the others to proceed without him. But now it was too late. He was pledged. He had joined the League. He was its chief, and his defection might mean its disintegration at the very time when it needed all its strength to fight the land cases. More than a mere deal in bad politics was involved. There was the land grab. His withdrawal from an unholy cause would mean the weakening, perhaps the collapse, of another cause that he believed to be righteous as truth itself. He was hopelessly caught in the mesh. Wrong seemed indissolubly knitted into the texture of Right. He was blinded, dizzied, overwhelmed, caught in the current of events, and hurried along he know not where. He resigned himself.

In the end, and after much ostentatious opposition on the part of the railroad heelers, Lyman was nominated and subsequently elected.

When this consummation was reached Magnus, Osterman, Broderson, and Annixter stared at each other. Their wildest hopes had not dared to fix themselves upon so easy a victory as this. It was not believable that the corporation would allow itself to be fooled so easily, would rush open-eyed into the trap. How had it happened?

Osterman, however, threw his hat into the air with wild whoops of delight. Old Broderson permitted himself a feeble cheer. Even Magnus beamed satisfaction. The other members of the League, present at the time, shook hands all around and spoke of opening a few bottles on the strength of the occasion. Annixter alone was recalcitrant.

"It's too easy," he declared. "No, I'm not satisfied. Where's Shelgrim in all this? Why don't he show his hand, damn his soul? The thing is yellow, I tell you. There's a big fish in these waters somewheres. I don't know his name, and I don't know his game, but he's moving round off and on, just out of sight. If you think you've netted him, I *don't*, that's all I've got to say."

But he was jeered down as a croaker. There was the Commission. He couldn't get around that, could he? There was Darrell and Lyman Derrick, both pledged to the ranches. Good Lord, he was never satisfied. He'd be obstinate till the very last gun was fired. Why, if he got drowned in a river he'd float up-stream just to be contrary.

In the course of time, the new board was seated. For the first few months of its term, it was occupied in clearing up the business left over by the old board and in the completion of the railway map. But now, the decks were cleared. It was about to address itself to the consideration of a revision of the tariff for the carriage of grain between the San Joaquin Valley and tide-water.

Both Lyman and Darrell were pledged to an average ten per cent cut of the grain rates throughout the entire State.

The typewriter returned with the letters for Lyman to sign, and he put away the map and took up his morning's routine of business, wondering, the while, what would become of his practice during the time he

was involved in the business of the Ranchers' Railroad Commission.

But towards noon, at the moment when Lyman was drawing off a glass of mineral water from the siphon that stood at his elbow, there was an interruption. Some one rapped vigorously upon the door, which was immediately after opened, and Magnus and Harran came in, followed by Presley.

"Hello, hello!" cried Lyman, jumping up, extending his hands, "why, here's a surprise. I didn't expect you all till to-night. Come in, come in and sit down. Have a glass of sizz-water, Governor."

The others explained that they had come up from Bonneville the night before, as the Executive Committee of the League had received a despatch from the lawyers it had retained to fight the Railroad, that the judge of the court in San Francisco, where the test cases were being tried, might be expected to hand down his decision the next day.

Very soon after the announcement of the new grading of the ranchers' lands, the corporation had offered, through S. Behrman, to lease the disputed lands to the ranchers at a nominal figure. The offer had been angrily rejected, and the Railroad had put up the lands for sale at Ruggles's office in Bonneville. At the exorbitant price named, buyers promptly appeared—dummy buyers, beyond shadow of doubt, acting either for the Railroad or for S. Behrman—men hitherto unknown in the county, men without property, without money, adventurers, heelers. Prominent among them, and bidding for the railroad's holdings included on Annixter's ranch, was Delaney.

The farce of deeding the corporation's sections to these fictitious purchasers was solemnly gone through with at Ruggles's office, the Railroad guaranteeing them possession. The League refused to allow the supposed buyers to come upon the land, and the Railroad, faithful to its pledge in the matter of guaranteeing its dummies possession, at once began suits in ejectment in the district court in Visalia, the county seat.

It was the preliminary skirmish, the reconnaisance in force, the combatants feeling each other's strength, willing to proceed with caution, postponing the actual death-grip for a while till each had strengthened its position and organised its forces.

During the time the cases were on trial at Visalia, S. Behrman was much in evidence in and about the courts. The trial itself, after tedious preliminaries, was brief. The ranchers lost. The test cases were immediately carried up to the United States Circuit Court in San Francisco. At the moment the decision of this court was pending.

"Why, this is news," exclaimed Lyman, in response to the Governor's announcement; "I did not expect them to be so prompt. I was in court court only last week and there seemed to be no end of business ahead. I suppose you are very anxious?"

Magnus nodded. He had seated himself in one of Lyman's deep chairs, his grey top-hat, with its wide brim, on the floor beside him. His coat of black broadcloth that had been tightly packed in his valise, was yet wrinkled and creased; his trousers were strapped under his high boots. As he spoke, he stroked the bridge of his hawklike nose with his bent forefinger.

Leaning back in his chair, he watched his two sons with secret delight. To his eye, both were perfect specimens of their class, intelligent, well-looking, resourceful. He was intensely proud of them. He was never happier, never more nearly jovial, never more erect, more military, more alert, and buoyant than when in the company of his two sons. He honestly believed that no finer examples of young manhood existed throughout the entire nation.

"I think we should win in this court," Harran observed, watching the bubbles break in his glass. "The investigation has been much more complete than in the Visalia trial. Our case this time is too good. It has made too much talk. The court would not dare render a decision for the Railroad. Why, there's the agreement in black and white—and the circulars the Railroad issued. How *can* one get around those?"

"Well, well, we shall know in a few hours now," remarked Magnus.

"Oh," exclaimed Lyman, surprised, "it is for this morning, then. Why aren't you at the court?"

"It seemed undignified, boy," answered the Governor. "We shall know soon enough."

"Good God!" exclaimed Harran abruptly, "when I think of what is involved. Why, Lyman, it's our home, the ranch house itself, nearly all Los Muertos, practically our whole fortune, and just now when there is promise of an enormous crop of wheat. And it is not only us. There are over half a million acres of the San Joaquin involved. In some cases of the smaller ranches, it is the confiscation of the whole of the rancher's land. If this thing goes through, it will absolutely beggar nearly a hundred men. Broderson wouldn't have a thousand acres to his name. Why, it's monstrous."

"But the corporations offered to lease these lands," remarked Lyman. "Are any of the ranchers taking up that offer—or are any of them buying outright?"

"Buying! At the new figure!" exclaimed Harran, "at twenty and thirty an acre! Why, there's not one in ten that *can*. They are land-poor. And as for leasing—leasing land they virtually own—no, there's precious few are doing that, thank God! That would be acknowledging the railroad's ownership right away—forfeiting their rights for good. None of the *Leaguers* are doing it, I know. That would be the rankest treachery."

He paused for a moment, drinking the rest of the mineral water, then interrupting Lyman, who was about to speak to Presley, drawing him into the conversation through politeness, said: "Matters are just romping right along to a crisis these days. It's a make or break for the wheat growers of the State now, no mistake. Here are the land cases and the new grain tariff drawing to a head at about the same time. If we win our land cases, there's your new freight rates to be applied, and then all is beer and skittles. Won't the San Joaquin go wild if we pull it off, and I believe we will."

"How we wheat growers are exploited and trapped and deceived at every turn," observed Magnus sadly. "The courts, the capitalists, the railroads, each of them in turn hoodwinks us into some new and wonderful scheme, only to betray us in the end. "Well," he added, turning to Lyman, "one thing at least we can depend on. We will cut their grain rates for them, eh, Lyman?"

Lyman crossed his legs and settled himself in his office chair.

"I have wanted to have a talk with you about that, sir," he said. "Yes, we will cut the rates—an average 10 per cent, cut throughout the State, as we are pledged. But I am going to warn you, Governor, and you, Harran; don't expect too much at first. The man who, even after twenty years' training in the operation of railroads, can draw an equitable, smoothly working schedule of freight rates between shipping point and common point, is capable of governing the United States. What with main lines, and leased lines, and points of transfer, and the laws governing common carriers, and the rulings of the Inter-State Commerce Commission, the whole matter has become so confused that Vanderbilt himself couldn't straighten it out. And how can it be expected that railroad commissions who are chosen—well, let's be frank—as ours was, for instance, from out a number of men who don't know the difference between a switching charge and a differential rate, are going to regulate the whole business in six months' time? Cut rates; yes, any fool can do that; any fool can write one dollar instead of two, but if you cut too low by a fraction of one per cent. and if the railroad can get out an injunction, tie you up and show that your new rate prevents the road being operated at a profit, how are you any better off?"

"Your conscientiousness does you credit, Lyman," said the Governor. "I respect you for it, my son. I know you will be fair to the railroad. That is all we want. Fairness to the corporation is fairness to the farmer, and we won't expect you to readjust the whole matter out of hand. Take your time. We can afford to wait."

"And suppose the next commission is a railroad board, and reverses all our figures?"

The one-time mining king, the most redoubtable poker player of Calaveras County, permitted himself a momentary twinkle of his eyes.

"By then it will be too late. We will, all of us, have made our fortunes by then."

The remark left Presley astonished out of all measure. He never could accustom himself to these strange lapses in the Governor's character. Magnus was by nature a public man, judicious, deliberate, standing firm for principle, yet upon rare occasion, by some such remark as this, he would betray the presence of a sub-nature of recklessness, inconsistent, all at variance with his creeds and tenets.

At the very bottom, when all was said and done, Magnus remained the Forty-niner. Deep down in his heart the spirit of the Adventurer yet persisted. "We will all of us have made fortunes by then." That was it precisely. "After us the deluge," For all his public spirit, for all his championship of justice and truth, his respect for law, Magnus remained the gambler, willing to play for colossal stakes, to hazard a fortune on the chance of winning a million. It was the true California spirit that found expression through him, the spirit of the West, unwilling to occupy itself with details, refusing to wait, to be patient, to achieve by legitimate plodding; the miner's instinct of wealth acquired in a single night prevailed, in spite of all. It was in this frame of mind that Magnus and the multitude of other ranchers of whom he was a type, farmed their ranches. They had no love for their land. They were not attached to the soil. They worked their ranches as a quarter of a century before they had worked their mines. To husband the resources of their marvellous San Joaquin, they considered niggardly, petty, Hebraic. To get all there was out of the land, to squeeze it dry, to exhaust it, seemed their policy. When, at last, the land worn out, would refuse to yield, they would invest their money in something else; by then, they would all have made fortunes. They did not care. "After us the deluge."

Lyman, however, was obviously uneasy, willing to change the subject. He rose to his feet, pulling down his cuffs.

"By the way," he observed, "I want you three to lunch with me to-day at my club. It is close by. You can wait there for news of the court's decision as well as anywhere else, and I should like to show you the place. I have just joined."

At the club, when the four men were seated at a small table in the round window of the main room, Lyman's popularity with all classes was very apparent. Hardly a man entered that did not call out a salutation to him, some even coming over to shake his hand. He seemed to be every man's friend,

and to all he seemed equally genial. His affability, even to those whom he disliked, was unfailing.

"See that fellow yonder," he said to Magnus, indicating a certain middle-aged man, flamboyantly dressed, who wore his hair long, who was afflicted with sore eyes, and the collar of whose velvet coat was sprinkled with dandruff, "that's Hartrath, the artist, a man absolutely devoid of even the commonest decency. How he got in here is a mystery to me."

Yet, when this Hartrath came across to say "How do you do" to Lyman, Lyman was as eager in his cordiality as his warmest friend could have expected.

"Why the devil are you so chummy with him, then?" observed Harran when Hartrath had gone away.

Lymann's explanation was vague. The truth of the matter was, that Magnus' oldest son was consumed by inordinate ambition. Political preferment was his dream, and to the realisation of this dream popularity was an essential. Every man who could vote, blackguard or gentleman, was to be conciliated, if possible. He made it his study to become known throughout the entire community—to put influential men under obligations to himself. He never forgot a name or a face. With everybody he was the hail-fellow-well-met. His ambition was not trivial. In his disregard for small things, he resembled his father. Municipal office had no attraction for him. His goal was higher. He had planned his life twenty years ahead. Already Sheriff's Attorney, Assistant District Attorney and Railroad Commissioner, he could, if he desired, attain the office of District Attorney itself. Just now, it was a question with him whether or not it would be politic to fill this office. Would it advance or sidetrack him in the career he had outlined for himself? Lyman wanted to be something better than District Attorney, better than Mayor, than State Senator, or even than member of the United States Congress. He wanted to be, in fact, what his father was only in name—to succeed where Magnus had failed. He wanted to be governor of the State. He had put his teeth together, and, deaf to all other considerations, blind to all other issues, he worked with the infinite slowness, the unshakable tenacity of the coral insect to this one end.

After luncheon was over, Lyman ordered cigars and liqueurs, and with the three others returned to the main room of the club. However, their former place in the round window was occupied. A middle-aged man, with iron grey hair and moustache, who wore a frock coat and a white waistcoat, and in some indefinable manner suggested a retired naval officer, was sitting at their table, smoking a long, thin cigar. At sight of him, Presley became animated. He uttered a mild exclamation:

"Why, isn't that Mr. Cedarquist?"

"Cedarquist?" repeated Lyman Derrick. "I know him well. Yes, of course it is," he continued. "Governor, you must know him. He is one of our representative men. You would enjoy talking to him. He was the head of the big Atlas Iron Works. They have shut down recently, you know. Not failed exactly, but just ceased to be a paying investment, and Cedarquist closed them out. He has other interests, though. He's a rich man—a capitalist."

Lyman brought the group up to the gentleman in question and introduced them.

"Mr. Magnus Derrick, of course," observed Cedarquist, as he took the Governor's hand. "I've known you by repute for some time, sir. This is a great pleasure, I assure you." Then, turning to Presley, he added: "Hello, Pres, my boy. How is the great, the very great Poem getting on?"

"It's not getting on at all, sir," answered Presley, in some embarrassment, as they all sat down. "In fact, I've about given up the idea. There's so much interest in what you might call 'living issues' down at Los Muertos now, that I'm getting further and further from it every day."

"I should say as much," remarked the manufacturer, turning towards Magnus. "I'm watching your fight with Shelgrim, Mr. Derrick, with every degree of interest." He raised his drink of whiskey and soda. "Here's success to you."

As he replaced his glass, the artist Hartrath joined the group uninvited. As a pretext, he engaged Lyman in conversation. Lyman, he believed, was a man with a "pull" at the City Hall. In connection with a projected Million-Dollar Fair and Flower Festival, which at that moment was the talk of the city, certain statues were to be erected, and Hartrath bespoke Lyman's influence to further the pretensions of a sculptor friend of his, who wished to be Art Director of the affair. In the matter of this Fair and Flower Festival, Hartrath was not lacking in enthusiasm. He addressed the others with extravagant gestures, blinking his inflamed eyelids.

"A million dollars," he exclaimed. "Hey! think of that. Why, do you know that we have five hundred thousand practically pledged already? Talk about public spirit, gentlemen, this is the most public-spirited city on the continent. And the money is not thrown away. We will have Eastern visitors here by the thousands—capitalists—men with money to invest. The million we spend on our fair will be money in our pockets. Ah, you should see how the women of this city are taking hold of the matter. They are giving all kinds of little entertainments, teas, 'Olde Tyme Singing Skules,' amateur theatricals, gingerbread *fetes*, all for the benefit of the fund, and the business men, too—pouring out their money like water. It is splendid, splendid, to see a community so patriotic."

The manufacturer, Cedarquist, fixed the artists with a glance of melancholy interest.

"And how much," he remarked, "will they contribute—your gingerbread women and public-spirited capitalists, towards the blowing up of the ruins of the Atlas Iron Works?"

"Blowing up? I don't understand," murmured the artist, surprised.

"When you get your Eastern capitalists out here with your Million-Dollar Fair," continued Cedarquist, "you don't propose, do you, to let them see a Million-Dollar Iron Foundry standing idle, because of the indifference of San Francisco business men? They might ask pertinent questions, your capitalists, and we should have to answer that our business men preferred to invest their money in corner lots and government bonds, rather than to back up a legitimate industrial enterprise. We don't want fairs. We want active furnaces. We don't want public statues, and fountains, and park extensions and gingerbread *fetes*. We want business enterprise. Isn't it like us? Isn't it like us?" he exclaimed sadly. "What a melancholy comment! San Francisco! It is not a city—it is a Midway Plaisance. California likes to be fooled. Do you suppose Shelgrim could convert the whole San Joaquin Valley into his back yard otherwise? Indifference to public affairs—absolute indifference, it stamps us all. Our State is the very paradise of fakirs. You and your Million-Dollar Fair!" He turned to Hartrath with a quiet smile. "It is just such men as you, Mr. Hartrath, that are the ruin of us. You organise a sham of tinsel and pasteboard, put on fool's cap and bells, beat a gong at a street corner, and the crowd cheers you and drops nickels into your hat. Your gingerbread *fete;* yes, I saw it in full blast the other night on the grounds of one of your women's places on Sutter Street. I was on my way home from the last board meeting of the Atlas Company. A *gingerbread fete*, my God! and the Atlas plant shutting down for want of financial backing. A million dollars spent to attract the Eastern investor, in order to show him an abandoned rolling mill, wherein the only activity is the sale of remnant material and scrap steel."

Lyman, however, interfered. The situation was becoming strained. He tried to conciliate the three men—the artist, the manufacturer, and the farmer, the warring elements. But Hartrath, unwilling to face the enmity that he felt accumulating against him, took himself away. A picture of his—"A Study of the Contra Costa Foothills"—was to be raffled in the club rooms for the benefit of the Fair. He, himself, was in charge of the matter. He disappeared.

Cedarquist looked after him with contemplative interest. Then, turning to Magnus, excused himself for the acridity of his words.

"He's no worse than many others, and the people of this State and city are, after all, only a little more addle-headed than other Americans." It was his favourite topic. Sure of the interest of his hearers, he unburdened himself.

"If I were to name the one crying evil of American life, Mr. Derrick," he continued, "it would be the indifference of the better people to public affairs. It is so in all our great centres. There are other great trusts, God knows, in the United States besides our own dear P. and S. W. Railroad. Every State has its own grievance. If it is not a railroad trust, it is a sugar trust, or an oil trust, or an industrial trust, that exploits the People, *because the People allow it.* The indifference of the People is the opportunity of the despot. It is as true as that the whole is greater than the part, and the maximum is so old that it is trite—it is laughable. It is neglected and disused for the sake of some new ingenious and complicated theory, some wonderful scheme of reorganisation, but the fact remains, nevertheless, simple, fundamental, everlasting. The People have but to say 'No,' and not the strongest tyranny, political, religious, or financial, that was ever organised, could survive one week."

The others, absorbed, attentive, approved, nodding their heads in silence as the manufacturer finished.

"That's one reason, Mr. Derrick," the other resumed after a moment, "why I have been so glad to meet you. You and your League are trying to say 'No' to the trust. I hope you will succeed. If your example will rally the People to your cause, you will. Otherwise—" he shook his head.

"One stage of the fight is to be passed this very day," observed Magnus. "My sons and myself are expecting hourly news from the City Hall, a decision in our case is pending."

"We are both of us fighters, it seems, Mr. Derrick," said Cedarquist. "Each with his particular enemy. We are well met, indeed, the farmer and the manufacturer, both in the same grist between the two millstones of the lethargy of the Public and the aggression of the Trust, the two great evils of modern America. Pres, my boy, there is your epic poem ready to hand."

But Cedarquist was full of another idea. Rarely did so favourable an opportunity present itself for explaining his theories, his ambitions. Addressing himself to Magnus, he continued:

"Fortunately for myself, the Atlas Company was not my only investment. I have other interests. The building of ships—steel sailing ships—has been an ambition of mine, —for this purpose, Mr. Derrick, to carry American wheat. For years, I have studied this question of American wheat, and at last, I have arrived at a theory. Let me explain. At present, all our California wheat goes to

Liverpool, and from that port is distributed over the world. But a change is coming. I am sure of it. You young men," he turned to Presley, Lyman, and Harran, "will live to see it. Our century is about done. The great word of this nineteenth century has been Production. The great word of the twentieth century will be—listen to me, you youngsters—Markets. As a market for our Production—or let me take a concrete example—as a market for our *Wheat*, Europe is played out. Population in Europe is not increasing fast enough to keep up with the rapidity of our production. In some cases, as in France, the population is stationary. *We*, however, have gone on producing wheat at a tremendous rate. The result is overproduction. We supply more than Europe can eat, and down go the prices. The remedy is *not* in the curtailing of our wheat areas, but in this, we *must have new markets, greater markets*. For years we have been sending our wheat from East to West, from California to Europe. But the time will come when we must send it from West to East. We must march with the course of empire, not against it. I mean, we must look to China. Rice in China is losing its nutritive quality. The Asiatics, though, must be fed; if not on rice, then on wheat. Why, Mr. Derrick, if only one-half the population of China ate a half ounce of flour per man per day all the wheat areas in California could not feed them. Ah, if I could only hammer that into the brains of every rancher of the San Joaquin, yes, and every owner of every bonanza farm in Dakota and Minnesota. Send your wheat to China; handle it yourselves; do away with the middleman; break up the Chicago wheat pits and elevator rings and mixing houses. When in feeding China you have decreased the European shipments, the effect is instantaneous. Prices go up in Europe without having the least effect upon the prices in China. We hold the key, we have the wheat,—infinitely more than we ourselves can eat. Asia and Europe must look to America to be fed. What fatuous neglect of opportunity to continue to deluge Europe with our surplus food when the East trembles upon the verge of starvation!"

The two men, Cedarquist and Magnus, continued the conversation a little further. The manufacturer's idea was new to the Governor. He was greatly interested. He withdrew from the conversation. Thoughtful, he leaned back in his place, stroking the bridge of his beak-like nose with a crooked forefinger.

Cedarquist turned to Harran and began asking details as to the conditions of the wheat growers of the San Joaquin. Lyman still maintained an attitude of polite aloofness, yawning occasionally behind three fingers, and Presley was left to the company of his own thoughts.

There had been a day when the affairs and grievances of the farmers of his acquaintance—Magnus, Annixter, Osterman and old Broderson—had filled him only with disgust. His mind full of a great, vague epic poem of the West, he had kept himself apart, disdainful of what he chose to consider their petty squabbles. The the scene in Annixter's harness room had thrilled and uplifted him. He was palpitating with excitement all through the succeeding months. He abandoned the idea of an epic poem. In six months he had not written a single verse. Day after day he trembled with excitement as the relations between the Trust and League became more and more strained. He saw the matter in its true light. It was typical. It was the world-old war between Freedom and Tyranny, and at times his hatred of the railroad shook him like a crisp and withered reed, while the languid indifference of the people of the State to the quarrel filled him with a blind exasperation.

But, as he had once explained to Vanamee, he must find expression. He felt that he would suffocate otherwise. He had begun to keep a journal. As the inclination spurred him, he wrote down his thoughts and ideas in this, sometimes every day, sometimes only three or four times a month. Also he flung aside his books of poems—Milton, Tennyson, Browning, even Homer—and addressed himself to Mill, Malthus, Young, Poushkin, Henry George, Schopenhauer. He attacked the subject of Social Inequality with unbounded enthusiasm. He devoured, rather than read, and emerged from the affair, his mind a confused jumble of conflicting notions, sick with over-effort, raging against injustice and oppression, and with not one sane suggestion as to remedy or redress.

The butt of his cigarette scorched his fingers and roused him from his brooding. In the act of lighting another, he glanced across the room and was surprised to see two very prettily dressed young women in the company of an older gentleman, in a long frock coat, standing before Hartrath's painting, examining it, their heads upon one side.

Presley uttered a murmur of surprise. He, himself, was a member of the club, and the presence of women within its doors, except on special occasions, was not tolerated. He turned to Lyman Derrick for an explanation, but this other had also seen the women and abruptly exclaimed.

"I declare, I had forgotten about it. Why, this is Ladies' Day, of course."

"Why, yes," interposed Cedarquist, glancing at the women over his shoulder. "Didn't you know? They let 'em in twice a year, you remember, and this is a double occasion. They are going to raffle Hartrath's picture,—for the benefit of the Gingerbread Fair. Why, you are not up to date, Lyman. This is a sacred and religious rite,—an important public event."

"Of course, of course," murmured Lyman. He found means to survey Harran and Magnus. Certainly, neither his father nor his brother were dressed for the function that impended. He had been stupid. Magnus invariably attracted attention, and now with his trousers strapped under his boots, his wrinkled frock coat—Lyman twisted his cuffs into sight in an impatient, nervous movement of his wrists, glancing a second time at his brother's pink face, forward curling, yellow hair and clothes of a country cut. But there was no help for it. He wondered what were the club regulations in the matter of bringing in visitors on Ladies' Day.

"Sure enough, Ladies' Day," he remarked, "I am very glad you struck it, Governor. We can sit right where we are. I guess this is as good a place as any to see the crowd. It's a good chance to see all the big guns of the city. Do you expect your people here, Mr. Cedarquist?"

"My wife may come, and my daughters," said the manufacturer.

"Ah," murmured Presley, "so much the better. I was going to give myself the pleasure of calling upon your daughters, Mr. Cedarquist, this afternoon."

"You can save your carfare, Pres," said Cedarquist, "you will see them here."

No doubt, the invitations for the occasion had appointed one o'clock as the time, for between that hour and two, the guests arrived in an almost unbroken stream. From their point of vantage in the round window of the main room, Magnus, his two sons, and Presley looked on very interested. Cedarquist had excused himself, affirming that he must look out for his women folk.

Of every ten of the arrivals, seven, at least, were ladies. They entered the room—this unfamiliar masculine haunt, where their husbands, brothers, and sons spent so much of their time—with a certain show of hesitancy and little, nervous, oblique glances, moving their heads from side to side like a file of hens venturing into a strange barn. They came in groups, ushered by a single member of the club, doing the honours with effusive bows and polite gestures, indicating the various objects of interest, pictures, busts, and the like, that decorated the room.

Fresh from his recollections of Bonneville, Guadalajara, and the dance in Annixter's barn, Presley was astonished at the beauty of these women and the elegance of their toilettes. The crowd thickened rapidly. A murmur of conversation arose, subdued, gracious, mingled with the soft rustle of silk, grenadines, velvet. The scent of delicate perfumes spread in the air, Violet de Parme, Peau d'Espagne. Colours of the most harmonious blends appeared and disappeared at intervals in the slowly moving press, touches of lavender-tinted velvets, pale violet crêpes and cream-coloured appliquéd laces.

There seemed to be no need of introductions. Everybody appeared to be acquainted. There was no awkwardness, no constraint. The assembly disengaged an impression of refined pleasure. On every hand, innumerable dialogues seemed to go forward easily and naturally, without break or interruption, witty, engaging, the couple never at a loss for repartee. A third party was gracefully included, then a fourth. Little groups were formed,—groups that divided themselves, or melted into other groups, or disintegrated again into isolated pairs, or lost themselves in the background of the mass,—all without friction, without embarrassment,—the whole affair going forward of itself, decorous, tactful, well-bred.

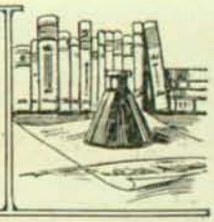
At a distance, and not too loud, a stringed orchestra sent up a pleasing tune. Waiters, with brass buttons on their full dress coats, went from group to group, silent, unobtrusive, serving salads and ices.

(To be continued)

Fast Lives Are Short Ones

Two distinguished biologists, in recent pronouncements on the always-interesting problem of how to live long, have reached substantially the same conclusion. It is that long life results from two things working together. One is inherited; the other not. That children of long-lived parents and grand-parents are much more likely to be long lived than are persons who do not possess this inherited advantage was emphasized by one of the recent speakers, Sir Humphrey Rolleston, in an address on "Old Age," at the Royal Institution, in London. Sir Humphrey admitted, however, the importance of care during lifetime, especially care in avoiding disease. Many diseases, even if not immediately fatal, may weaken the body so that life is shortened. The other biologist is Professor Raymond Pearl, of Johns Hopkins University, Baltimore, Md., who is now delivering a series of lectures in Europe on "The Rate of Living." Professor Pearl has studied sample "populations" of tiny fruit flies, raised in closed bottles provided with food. A bottle full of these flies behaves, Professor Pearl finds, much as does a human population, like the population of the United States. The chief difference is that the average life-time of the flies is measured in days instead of years. These experiments indicate the same two causes of unusual longevity shown by Sir Humphrey Rolleston's data. As in mankind, the descendents of long-lived insects tend also to be long of life. The other factor is the amount of activity during life; what Professor Pearl calls the "rate of living." The "faster" a fly lives, other things equal, the younger that fly will die.

CORRESPONDENCE



L. U. NO. 7, SPRINGFIELD, MASS.

Editor:

William D. Mulligan of Tucson, Ariz., appointed himself a committee of one (presumably because he considers himself capable) to question a statement which I made in the May issue of the WORKER. I said that the prosecutors of today have adopted the motto of the Jesuits of old, "The end justifies the means," and by comparison, says Brother Mulligan, my statement means that there was nothing too low or too mean that the Jesuits did not do. Brother Mulligan demands an apology or at least an explanation as to why I slander the Catholic Church. I quite agree with Brother Mulligan when he says that the pages of the JOURNAL are not the place for slurs against any man's creed or pet dogmas. (So many and so varied are these creeds and dogmas that it is almost impossible for an intelligent person to say anything without offending some one of them.) And my remark about the Jesuits was not intended as a slur against the Catholic Church. In fact Pope Clement XIV abolished the Jesuit order. He died soon after and it is curious to note that one history of the Jesuits says that the Jesuits poisoned the Pope while the other one that I am consulting says that while many people thought so it is however untrue.

The books to which I am referring are: The Jesuits, Theodor Griesinger; The Jesuits, W. C. Cartwright; Jesuitism, Thomas Carlyle.

My impression of the Jesuits had been gained from reading English literature for the past 15 years. And my impression is wrong in that it is not black enough. I have copied paragraphs from the above books which I had intended to quote but I have decided that Brother Mulligan is right and I will not put such scandalous statements in our WORKER. If you want to read them get the above mentioned books or any others that are in the library and read them yourselves. It is sufficient for me to say that the motto which I quoted is one of the three cardinal propositions of the Jesuit system and W. C. Cartwright amply proves it by quoting from Jesuit writings. Brother Mulligan says that American history disproves my statement. But Brother Mulligan, it is not American history that is in question! And of Jesuit history, Brother Mulligan knows little. If he was of the type of person really looking for information Brother Mulligan could have got all he wanted at a public library without questioning my motives or character. There are people who are self-conscious about religion or race and such people see slights where none are intended.

While we are on the subject of religious slurs may I add that the committees appointed to write resolutions on the death of our Brothers usually do commit such slurs by saying that God is pleased to see some poor Brother die a lingering death of tuberculosis or pleased that some poor Brother got burned to death on a pole.

I. S. GORDON.

Nobody can afford to ignore books but a genius.—*Holbrook Jackson.*

L. U. NO. 46, SEATTLE, WASH.

Editor:

"Hail! hail! the gang's all here," and this the month of the convention with something doing morning, noon and night. There are a number of resolutions coming up that are worthy of serious consideration; so delegates do your best.

The way these "Byrd's" are getting "Acosta" ocean these days, two years from now the delegates will pull a "Lindy" for Paris or the North Pole, and the North Pole would be an ice place to hold a convention, me thinks.

As stated before, Brothers Tom Lee, Frank Corbett and Byron Vickerage are going to represent Local Union No. 46 at the convention and they well deserve the trip. Brother Lee, who is International Organizer for this district, it gives me pleasure to say, has that happy faculty of being able to keep harmony in the various locals over which he keeps a watchful eye and I can say without fear of contradiction that Brother Lee knows just what is going on in all the locals. Whenever trouble looms up we all look for Brother Lee to do the heavy work. I might also mention the fact that there hasn't been a strike here in fifteen years so skillfully have the various local situations been taken care of. At this time negotiations are in progress with the Instantaneous Alarm Company, and we look forward to an amicable settlement.

Hats off, boys, to our organizers whose actions speak louder than words and whose good deeds so often go unsung.

It is only fair that I should tell on the others also. Brother Corbett has been doing duty on our executive board for lo, these many years and has accomplished much good for the local. Brother Vickerage represents Local Union No. 46 at the Central Labor Council and is very consistent in attendance both there and at the local meetings.

How often do we wonder what the many press secretaries look like as we read the different interesting letters sent in? I know I do and why wouldn't it be a good stunt if our worthy Editor set aside one issue in which all scribes could have their smiling faces at the top of their columns? Not that the writer is particularly anxious to have his there but it sure would bring us into closer touch with each other and that is what we are striving for in this little old world—closer relationship.

Well, the Ladies' Social Club put over the first picnic this year in great shape last Sunday at Cottage Lake, a pretty little lake a few miles out of Seattle, and say, the eats that were piled up on the various tables—it looked just like Thanksgiving, New Year's or the Fourth of July, Christmas or some such holiday. Anyway, I know I slaughtered my share and then topped it off with vanilla ice cream smothered with strawberries. Um! Um! There were races galore and many wonderful prizes were given, these having been selected by Mrs. Carl Leaf.

Brother Gus Bohmer (who smokes Buckingham and tosses a mean shoe) and myself enjoyed a game of barnyard golf at the expense of our two partners; we tried for ringers but they made 'em.

Brother Wooley, our business representative, was there with his wife and family. Mrs. Wooley has not been enjoying the best of health and we were agreeably surprised to see her and hope that she will feel able to be with us again at the next picnic.

Every one had a very enjoyable time and already I have heard the question, "When are we going to have another picnic?" So it goes to show that the members appreciate what their wives are doing in a social way when they ask the above question.

W. C. LINDELL.

L. U. NO. 60, SAN ANTONIO, TEXAS

Editor:

It appears to be a force of habit with me; every month I feel that the JOURNAL will not be complete without Local No. 60 being well represented. I don't know what the membership thinks about my stuff. I am certain some say "Pretty good" while others will say "That guy is a nut." Whatever the opinion will be, I will do my best.

I read last month's JOURNAL as usual from cover to cover. Find some snappy stuff contributed by our Brothers. Too bad the majority report a slump in work. While a writer up state says that no letter has appeared in the JOURNAL for some time and believes the JOURNAL is better off. No, Brother, you are wrong, the JOURNAL is made possible through our contributions, and without them, the sister locals won't know whether you are in existence or not.

Work is still slow here; no big jobs in sight. We are looking forward to an end of the slump soon. Brothers Eifler and Anderson are still city inspectors; Brother Peterson maintains at the Army camp; Brother Berry landed the maintenance job with the public theaters, succeeding Charles Hays, who went back to Martin Wright Electric Co.; Brother Berry will have to be congratulated for the good job he is making out of it, together with Brother Harvey. Brother Charles Kaiser maintains the million-dollar auditorium, while the ex-Brothers Rineburg, Lott, and Mickey, are the big guns for the Martin Wright Electric Co.

Once in a while I run across an old time I. B. E. W. man who estimates for Braden Hudson, a rat hole. "Old Bill" Flome, how he used to rave when we didn't pay up promptly, but he is gone. Brother David Krisch finished the Texas Theatre building, leaving that job with a feeling of satisfaction. A good job and it was a 100 per cent union job. We have to hand it to that big Dutchman for standing face-to-face with an ex-Brother and demanding card men on that job. While work is slack, most of the boys who make Local No. 60 possible, have their own homes and have benzine buggies, so no doubt a little vacation will be welcomed every now and then.

A two-dollar assessment has been rumored as necessary to raise our bank account. Every one knows that it takes money to run a local and then some guy gets up on the floor and howls out to "can" the business agent, not realizing what he is talking about. The business agent's job is one I wouldn't have at double the pay we are paying the one we have. The business agent is the man who views everything pertaining to our interest. He must talk to people who have sense and who haven't. Still he must

keep his temper. As for our business agent, Brother Howry, I will say that he don't wear patches on the seat of his trousers, but has his shoes half-soled often. That goes to prove he doesn't sit around and wait for something to happen. Still some guy wants him "canned." What good does he do the local? another member asks. Come to find out, this member has not attended several meetings. Of course he won't know what good he is doing. "A lot of useless expense," some one else cuts in. That's a good useless expense, I believe, and as a matter of fact I know. Therefore, the little assessment of two dollars a month.

An accident befell Brother Kaiser several days ago at the auditorium. He was burned with high voltage while working on the stage, and am glad to say his burns are not of a serious nature, and expect Brother Kaiser to be back on the job soon. Brother Harvey had a step-ladder slip out from under him and fell 12 feet to the sidewalk, causing him painful injuries. We hope he will be on his line of duty soon. Brother Howry traded his Holmes car for an Essex. He says he made a good trade. I hope Brother Krisch will get a foremanship job after finishing the Texas Theatre building, as the other two ex-Brothers did, but I hope he won't "high hat" us if he does, as that seems to be the outcome with others.

For the benefit of Brothers who want to go to the Del Rio, Texas, job would advise them to wait for some reliable information on that or get in touch with Brother Harvey here. He usually knows what's going on. It came to my attention that this job was ready for men. I understand the foundation has not been dug yet. It may save you a lot of hardship.

I raised a rumpus with Brother Harvey about a copy of the JOURNAL, as mine was late. A member standing next to me said "What do you want with that thing; it's only a lot of trash."

"That's a lot of trash to you, is it? Boy, that's what you make it."

"I never read it, there ain't nothing of interest in it. Nothing from this local, so why waste my time reading it?"

"Have you read last month's issue? If you haven't go and read it."

Next time I saw this member he tapped me on the shoulder and said: "That was a pretty good write-up you sent in; keep it up. Not only that but other things in the JOURNAL are good."

I still believe that there are members who glance at the cover and shelve the JOURNAL, not knowing what they are missing by not reading it. I read mine always, and am always glad to know what the boys are doing, but I certainly would like to see something from El Paso, Texas. Come on, Jacoby, let's hear from you all. Here is hoping the Brothers working at the movie studio won't get a reduction of salary. Stars earning from two to ten thousand a week can't afford a ten per cent cut while we movie operators receive a handsome salary of $36 to $65 a week and work longer. Such is life.

G. L. MONSIVE.

L. U. NO. 83, LOS ANGELES, CALIF.

Editor:

The smoke of the political battle of our yearly election has just cleared away, and the casualty list is not as great this year as it has been in the past four years. The entire administration has been re-elected, with only a very few exceptions.

This election has demonstrated an undisputable fact—that the organized inside electrical worker of Los Angeles, is all done with "isms" and "ologies," and from now on their efforts will be toward bettering working conditions and putting the local in a position to demand a wage scale that is in tune with the times.

For four years we have been assailed on all sides, but I take delight in stating that Local No. 83 is now in a more stable condition than it has been for some time. The success in the future is now assured, and we are out to win.

If every local union in the country would write this indelibly on their mind—that ours is a bread and butter organization and dedicated to the principle of true Brotherhood, higher wages, less hours of labor and better working conditions—the electrical industry would indeed be a better field to make a living in. But, it seems that these truths can only be known by experience.

Accurate information and education is the foundation on which the whole superstructure of successful organizations are built, so I have taken it on my humble self to submit a resolution to our constitution, to create a department of vital statistics so that in the future we, as an international, will no longer grope in the dark for the true condition of our local unions and the electrical industry as a whole.

J. "FLEA" MACDONALD.

L. U. NO. 103, BOSTON, MASS.

Editor:

Local No. 103 has just held its most important event of the year, an event which is looked ahead to a great deal, and, on the night it takes place there is plenty of excitement for both candidates and members. From the minute the polls are open, which is 4 p. m., till they are closed at 9 p. m. there is plenty of activity there. Having the polls open five hours gives all members a fair chance to vote. The minute after the polls close the election committee starts counting the ballots. Now, Brothers, these fellows have the "easiest job," all they do is count and check the ballots. This took them till the following day at noon and there were nine men on the committee.

All Brothers should try to get this job; it's such a "cinch." I have talked to many of the election committee men the past few years and this is the universal answer, "Never again!"

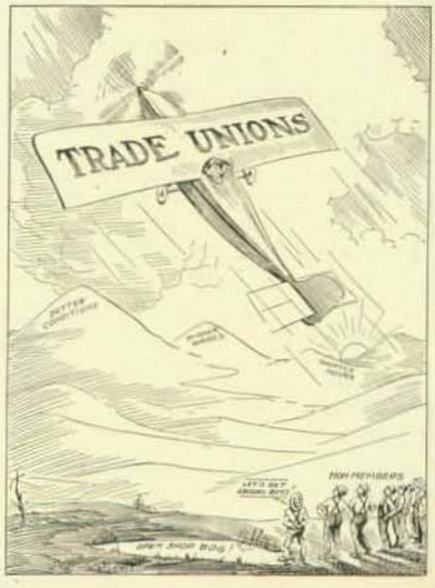
Well, Brothers, or rather Brothers who are out of town, I am not going to lose my standing with the Editor by having a letter too long, so I will give a list of the elected officers for the coming year: President, Frank L. Kelley; vice president, Stephen J. Murphy; financial secretary, John T. Fennell; recording secretary, Frank R. Sheehan; trustee, E. J. Carroll; inspectors, H. H. Doherty, W. Ralph; foreman, J. J. Flanagan.

These new names appear on the executive board: T. J. McSweeney and H. S. Goodwin.

Of course there were other officers elected to the State Branch, A. F. of L., and State Electrical Workers and International Convention, but I won't take the room to list them all here. I am trying to conserve space. I do want to state here I have been told I received a most handsome vote for press secretary. The election committee told me that nearly every member voted for me, and Brothers, I thank you! Our foreman, Flanagan, I believe, got a similar vote. You see, Brothers, we had no opposition. Ha! Ha!

GOODY.

THE SPIRIT OF THE TIMES



L. U. NO. 163, WILKES-BARRE, PA.

Editor:

I believe that we have the hardest worked business agent of any local union in the Brotherhood. I have never seen a time here in our city when our local needed a business agent more than we do at the present time. We have before us a program of lots of big and small buildings going up and contemplated, and with our open shop conditions all around us, up and down the Valley, the question of keeping our union men at work involves a man who has to be on the job early and late, and that is the work of our representative.

Our building trades council is progressing along lines that I believe that every other B. T. C. has to contend with. We believe that if we are tolerant to the extent that we feel that we are going to straighten out all that comes before us that may scare some people, and they will quit. But not so with the members of 163, so we can report progress with our B. T. C.

As to work here at the present time, we have had a very bad year in most of the building crafts, and we have had our share, although if we hadn't on the road our hard working Brother Mosley, some of our members wouldn't have had any pay envelope on Saturday night, and well they know this to be a fact. Our business department is a good paying proposition for our members, for the price that they pay into the local treasury for this service.

The question came up at a recent meeting as to having a clam bake this year, how about it boys? So far the clams seem to be still in the water, not of half of one per cent, how about it Jean Burke? I am sure Jack Parks or Don Guy are with you. Well, we had a good time at the last one anyhow, didn't we?

As I have not seen some of our old standbys around at the meetings for some time, and the 50-cent fine is now in force for not attending one meeting a month, I would advise our members who read this, to come to one meeting a month and save that 50 cents, and to advise all other members whom you see, and then we are sure to have some of the old time meetings, when we hadn't bench or chair room enough to accommodate the crowds, and the object of placing this fine on non-attending members, will be accomplished, and we will have your attendance, as it's your business.

F. W. BARBER.

If I were commissioned to design a sky scraper, I should recognize the steel structure just as a sculptor recognizes muscle and bone in guiding his chisel.—*George Gray Barnard.*

L. U. NO. 210 AND 211, ATLANTIC CITY, N. J.

Editor:

Introducing the elongated Sam-u-el W. Harvey, who will represent L. U. No. 211 at Detroit. You will find him to be all wool and a yard wide but treat him gently as he has not fully recovered from his battle with old man rumatiz.

Should something happen to prevent "Sam the old Accordion Man," from showing in Henry's City, my old college chum, Milt Turner, alias the Limb, will be on the job. But no matter which one goes, he will be instructed to demand Lobbetts Brew, as recommended by Putnam of 120. (We are too far away from the Border to ask for it here.) And speaking of brew just reminds me that unless I am badly mistaken the House of Frohme out in Wichita is divided on the subject of "hot and cold." Huh? But nevertheless, I would be right glad to see both Slim and Hally struttin' their stuff along our wooden way. A paid up ticket is the open sesame to Apt. 12.

The sudden death of Curt V. Reeder, in Newark, was a sad shock to his many friends here who mourn the passing of a remarkably square-shooter.

I do not want to appear sacrilegious, neither do I doubt the wisdom of the workings of our Creator, but I have often wondered just why a good guy is taken and some no account, lousy, pan-handling bum is left on this earth to pester other folks with his nefariousness.

At this time I deem it advisable to proffer a few hints as to how to behave at the banquet. (With due apologies to Bert Milton, A.M., M., P.M. and B.P.)

When it is time to don the nose-bag, do a Lindbergh right up to the table: place your lunch-hooks at a strategic point on either side of the plate. Keep your eyes on the other cash customers as they may try to outsmart you and always keep your mind on the job.

The "etticut" column in the June WORKER says that soup should be seen and not heard but if the soup is so hot that it burns, just gargle same until it cools. You will find this a much better way than trying to hide it in your neighbor's lap or under the table.

Remember that unless your napkin is vulcanized the soup will leak through, despite your hardest efforts to prevent.

If a bone shoots half way down your throat, don't try to cough it up—dig it out with your shoe-horn as it attracts less attention.

Should you spill the Java on your neighbor's vest hasten to assure him that you really don't care for soft drinks anyway and be sure to tell him that you sincerely hope he don't feel burnt.

Don't eat peas with a spoon, that's so commonplace—adjust your knife with side-boards but remember that it takes years of practice to successfully manipulate the latter and even then there is always the danger of a cut lip.

Eat, drink and be merry today; for tomorrow your digestive apparatus may be on the blink.

Last but not least, if you eat so much that it becomes necessary to loosen the belt or clothing, don't ask to be excused—just slide under the table to perform said operation.

Now that Dempsey has disposed of the human talking machine from Boston, I fervently hope that he smacks Mister Tunney right back into the Marines. Oh, boy! If he does that little thing I can die with a smile upon my face.

I hope everybody has a scrumptious time at Detroit—don't do anything I wouldn't and that gives you all a lotta lee-way.

Brother "K. O." Chambers will now bring this contribution to a close by rendering that pathetic little ballad entitled, "I don't have to look at the world through rose colored glasses—my eyes are blood-shot now."

Yours with a craving for more home made cherry pies.

BACHIE.

L. U. NO. 245, TOLEDO, OHIO

Editor:

By the time this article goes to press and is received by the members they will have had plenty of publicity concerning our new Christopher Columbus discovering the old world, using the air that filled the sails of the brigs of the olden exploration as the lifting power that lifted his modern ship the Spirit of St. Louis, beyond the starting point of Christopher a few centuries ago, reducing his time from months to hours, and that was quite an accomplishment, Colonel Lindbergh.

And now what we need is some one of his type to steer the good ship "The Spirit of Organization" safely across the troubled waters of corruption. But if such a flight was attempted the same body of greater business men that financed the Colonel's flight would give this all the financial influence they could if they would be assured of a perfect smash-up on the take off.

But as Lindbergh's flight is over and the other will never start, then the boys should not have anything of interest to read of in the papers besides the sporting page and the new murders and should find time to read the ELECTRICAL WORKERS' JOURNAL; so let's make it interesting for them.

Local No. 245 hasn't anything of interest to give you in regard to our new agreement; it's still on the fence with a strong wind blowing in the company's favor, and unless the wind changes its course it looks as if the boys here for the Light Company will not be able to tell their friends and immediate families that the company showed their appreciation of their loyal services by granting a small increase in wages.

We have been initiated here to something new in poles, namely 50 foot iron poles with iron cross arms; the initiation proved fatal to the extent that one of our good friends and loyal members in the person of Harry Hunt, is lying in a little hospital cot with one of those Andie Gump casts on his left leg waiting for a broken leg to heal. It seems that the hoodoo has taken quarters in Harry's home, for first Mrs. Hunt was sick and is not completely well yet, and now Harry is on his back, but even though Mrs. Hunt is not as strong as she should be, she has not allowed her own sickness to keep her from Harry's bedside at the hospital.

We have had a few days of real summer here and several of the boys have felt the result of the sun's rays. June 30 was a scorcher here and registered 98 in the shade with no shade in sight. Carson "Blackie" Harris very near went under from the effects of the heat that day. He looked bad from three o'clock until three fifty-eight, then he got up feeling fine. We quit at four o'clock. It's strange what quitting time will do sometimes. Now Nelson "Pig Eye" Sasse, another Brother of Maumee, has taken unto himself a wife. Sasse says that he don't mind the throwing of rice and shoes at a wedding, but swears that either "Nip" Wise or Tony Steffis forgot to remove his foot from one that was thrown at him. But Local No. 245 hereby extends congratulations to the bride and groom.

James Griesinger, one of our tireless truck drivers, has finally moved to his new home in the suburbs of Toledo. "Jimmy" built a new home for himself and Mrs. Griesinger and (well, time will add to the story), but there should be a house-warming party there, says I, with lemonade and everything.

Toledo has a new citizen now that H. Vanderluit, alias Beany, of the City's line crew, has moved into the city where he could be close to his work. There are few men these hot days that care to be close to work, but Beany is an exception.

Eaton Adams, of the heavy squad, claims that he picked a nice bouquet of linemen's flowers on the Fourth. When asked what lineman flowers were he replied that they were currant blossoms. That was just said to get his name in the JOURNAL. Here you are, Eaton!

Fred Swartzwalter (get that name) has announced that he is getting tired of single blessedness. Blessedness is right, if he would only realize it before it is too late. I advised him against getting married and would tell you what I said to him that should discourage him, but my wife reads the JOURNAL first before I get it; so that's out. Swartzwalter (I like to write that name) is our chief ground-man and we would hate to lose him but if he was to get

CONVENTIONS

First	St. Louis, Mo.	1891
Second	Chicago, Ill.	1892
Third	Cleveland, Ohio	1893
Fourth	Washington, D. C.	1895
Fifth	Detroit, Mich.	1897
Sixth	Pittsburgh	1899
Seventh	St. Louis, Mo.	1901
Eighth	Salt Lake City, Utah	1903
Ninth	Louisville, Ky.	1905
Tenth	Chicago, Ill.	1909
Eleventh	Rochester, N. Y.	1911
Twelfth	Boston, Mass.	1913
Thirteenth	St. Paul, Minn.	1915
Fourteenth	Atlantic City, N. J.	1917
Fifteenth	New Orleans, La.	1919
Sixteenth	St. Louis, Mo.	1921
Seventeenth	Montreal, Canada	1923
Eighteenth	Seattle, Wash.	1925
Nineteenth	Detroit, Mich.	1927

married he would have to go to work some place.

Local No. 245 no longer meets at the Labor Temple; we have rented a nice room at Kapp's Hall, centrally located up-town and a far better hall than the Temple afforded. Our first meeting, which was held there on July 5, was proof that the members approved of the change as two-thirds of the members were present. Even "Butch" Koehler was among those present, and, as usual, made the event interesting, for when "Butch" talks, he uses linemen's language and is understood by all present. We haven't any names for the new membership list this month but promises—say, we have lots of them! You see, promises don't cost anything. Several of the men working here have been here a long time, some of them years, enjoy our conditions and our wage scale which they never helped establish. It's simply a case of let me borrow what you've got, then we will have the same thing, only it won't cost me anything. In other words, their hands are in our pocket. We, the union men sowed the seed and they reap the harvest. They in some cases use the most flimsy excuses. Some of them have promised faithfully each pay for the last three years that they were coming in next pay and get on the right side of the fence.

Applications like that do not swell our treasury. Most of them know that their place is on the inside and blush as they put you off. They lack the nerve to openly refuse to come in but use the promise as an alibi. And when they do get a raise through our collective bargaining they even fail to say thank you. They don't give credit where credit is due; instead they pocket the money that collective bargaining got for them and continue to travel their path alone, but, like the alarm says at 5 a. m., there's agoin' to be an awakening.

And now, Mr. Editor, I wish to thank you for using your influence in having the ELECTRICAL WORKER sent to my address. But as there are still plenty of the boys here that are not getting the copy I can't let up on my appeal for the WORKER until all of these boys are getting it regularly. One member, Charles Hitzman, of 732 Huron Street, Toledo, Ohio, complains that in all the 18 years that he has been a paid-up member in the I. B. E. W. he has never received anything but a dun for his dues. Let's surprise him this month and send him one! And now after informing you that work is on a standstill here I will close so that the copy will be small enough to go as second-class mail and not have to be expressed to the members' houses.

EDW. E. DUKESHIRE,
1309 Walnut St.,
Toledo, Ohio.

(Editor's Note:—We hope Brother Hitzman connects with the JOURNAL this month. Let us say again that connection with the JOURNAL is a matter of sending in correct addresses as often as the address is changed.)

L. U. NO. 292, MINNEAPOLIS, MINN.

Editor:

We have just held our annual election of officers in the local. Also the city election was held on June 13, and as I have something to say about both elections, I will begin by reporting the results of the Local No. 292 election, which took place on the evening of Tuesday, June 21. The interest in the election centered on the business agent. We re-elected Lee R. Miller, who has held the office for two years, having given splendid service during that time, as can also be said of the rest of the re-elected officers.

The other officers elected are: President, P. L. Byron, re-elected; vice president, Telmosse, re-elected; financial secretary, G. W. Alexander, re-elected; treasurer, Filiatreau, re-elected; trustee, Larson; inspectors, Nelson and Velin; foreman, Green; recording secretary, Hackett; executive board, Christianson, re-elected, Gaustad, Urtubees, Lanzen, Ohlin; examining board, Johnson re-elected, Kook, Lanzen, re-elected, Enebo, Christianson. Many of the newly elected officers have served in the same capacities before or been in other positions of trust in the local, such as serving on important committees or being delegates to central bodies, and have demonstrated their worth and ability.

There will probably be some changes in the above list as some of the Brothers who were elected to positions on both the executive board and examining board, will resign one or the other, on the grounds that they like to get home occasionally and get acquainted with the wife and family. Also, as it was a tie vote between the two inspectors, they will have to draw straws, flip a coin, or put on the gloves to decide which will hold the title of first inspector.

LEE R. MILLER
Civil Service Commission, Minneapolis

At the recent city election our business agent, Brother Miller, did yeoman service in the cause of George E. Leach, the successful mayoralty candidate, who was labor's choice in the contest. His opponent, O. J. Turner, being backed by the Citizens' Alliance, and thereby hangs a tale.

Chief of Police Brunskill, who has been chief for some years under the previous Leach administration, has an exceptionally good record as a police chief, in keeping crime at a minimum in Minneapolis. But, as he was not the type of man to call peaceful picketing by union men "a crime," and the beating up of those pickets and other "rough stuff" pulled off by the thugs and scab herders of the strike-breaking gang, "righteous defense of property rights by good citizens," he incurred the political enmity of the Citizen's Alliance crowd. O. J. Turner, in his campaign, declared that if elected he would replace Brunskill with a new chief of police. Now, whether this attitude, on Turner's part, was dictated or instigated by the C. A., or whether he received the C. A. support on account of his attitude in this matter, I don't know. But the fact was plain enough that Turner's position regarding the P. C. question was very satisfactory to the C. A. The good citizens of Minneapolis, appreciating the splendid record of our police department under Chief Brunskill, and the impartial, fair and square, public spirited administration of the mayor's office, re-elected Mayor Leach to his fourth term of office, thereby retaining Chief Brunskill and showing their disapprobation of the policies of the Citizens' Alliance.

The Citizens' Alliance, I understand, has lost considerable prestige in the past few months, and not the least of the causes contributing to this, was their political activities and attitude in the recent city election.

In the working out of the manifest justice of things Brother Lee R. Miller has been appointed as a member of the civil service commission of the city, which fills a long felt want; that of a commissioner on the C. S. C. who is an active member of the labor movement.

Next Saturday the Electrical League will give their annual picnic. The league is a body composed of delegates from the different branches of the electrical trade, wholesalers, jobbers, contractors, and L. U. No. 292. These picnics have been very popular and succesful in past years, and we expect this one to be no exception.

I suppose most of the localities have been in full swing with the summer's work for some time. Minneapolis has not even made a fair start yet, as many of the building projects of the much heralded building boom are still hanging fire, and most of those that have materialized have started so recently that very few, if any, electricians are on the jobs as yet. And at that, there is a possibility that two or three of the largest of them will go "scab." All of which goes to demonstrate the foundation for some of the things I have been saying in my last two or three letters.

One bad feature of the recent municipal election was the losing of five of our eight remaining labor aldermen. Four years ago we had 14 labor aldermen out of the 26 aldermen composing the city council. Two years ago this was cut to eight, and this year we lost five of these. So it seems that there is even less unity and organized thought, and more confusion and chaos in the minds of the workers on the political field than on the economic field, if that be possible. Truly the workers stand in dire need of working class education of the kind that shall quicken their minds to the imperative necessity of united, logical, intelligent action on both the economic and political field for the conservation of their own welfare.

W. WAPLES.

L. U. NO. 309, E. ST. LOUIS, ILL.

Editor:

Greetings. L. U. No. 309 held their regular election in June and the results were some surprise to some people—but to the writer it was no surprise, but a huge delight. The old order of business has not only been reversed but done away with entirely. It is now possible for a member to express his honest opinion and still hold his job. There seems to be only one fly in our ointment at present and we hope to eliminate that in the future.

As to conditions here, they are very good; most all are working. We are negotiating two new wage agreements but progressing very slowly. There seem to be some stumbling blocks which the writer is not familiar with, but hopes to be and when he is (if he is) the facts will be sent to the WORKER for publication regardless of the results. The

Light company is doing quite a little high line work around here and in nearby towns. Most all inside men are busy, a condition that we hope will continue.

No. 309 is sending five delegates to the convention. Understand No. 1 is sending full delegation; No. 2 is also sending a representative. Let the good work go on.

THE ANGEL.

L. U. NO. 323, WEST PALM BEACH, FLA.

Editor:

I have just arrived home from the local meeting where I was called down for not writing to our JOURNAL every month, but I do not like to say the same thing every month. Lots of good climate and 90 per cent of our men walking the streets and nothing in sight and no money to go elsewhere—but that is the condition down here.

We had an election and those elected are as follows: President, T. P. Hussey; vice president, S. E. Worden; financial secretary, and business manager, H. W. Mitchel; treasurer, R. L. Rice; inspectors, W. F. Organ, W. C. Denny; foreman, G. Long; executive board, Calvin C. Douglas, J. G. Gattis and S. Dowrey; examining board, J. E. Childress, B. S. Randel and G. R. Stone; delegates to C. L. U., G. Blake, J. C. Moody and S. E. Worden; B. L. C., H. W. Mitchel, W. F. Organ and G. Blake; trustee, W. H. Long, for three years; and press secretary, G. Blake. That's that.

Be careful, all comers this way, as we have a real minister as president but you will get a fair shake if no work.

Some people say they can live on fish, oranges and climate. I guess our good Brother G. Long thought so as he went out and caught one that weighed 22 pounds. Maybe Brother George thought it was Christmas and was going to have one good feed.

I am going to ask the Editor to put in the proper column that we want to enforce Article 24, Section 9, of the constitution, as I think with 90 per cent of our members being out of work is difficulty enough to warrant us asking this protection. I am not much of a writer for a newspaper, as I think space is too precious for the "How do's" and foolishness but I believe in condensed items and let them be truthful and from all locals, both large and small. Don't be afraid, big boys, of letting us all know where a living can be made.

G. H. BLAKE.

L. U. NO. 492, MONTREAL, CAN.

Editor:

Owing to unforeseen circumstances our delegate to the convention, Brother Hadgkiss, will be unable to represent us, but his place will be taken by that veteran of many conventions, Brother J. P. Brodrick, who is our International Organizer for Eastern Canada and is also president of Local No. 492. Nothing need be said of or for him, but you fortunate delegates who are assembled at this convention, from Los Angeles in the West to New York in the East and from Canada in the North down to Tennessee who read this letter, as I hope you will from the copy of the JOURNAL which has been placed at your place, make it your business to meet the representative of this local, Brother Brodrick, shake his hand, you will surely meet a good, sincere laborite, and then again he may have something on the hip, as you must remember he has just come from "The Land of Liberty" Quebec, where we can get real beer, etc., etc., and also real liquor such as "Johnie Walker," "Dewar's Special," etc. Say! You fellows south of the line must be feeling pretty thirsty as you read this.

If Detroit can't satisfy your thirst, I would advise the whole convention to adjourn and entrain for Montreal; this local has been writing to the WORKER for almost two years continuously with only one month's exception and we have never once said "stay away from Montreal." Why should we when we know all the attractions, etc., that Montreal has and enjoys?

What has become of all the Canadian locals? Only three Canadian letters last month out of over thirty Canadian locals. Local No. 492 closes this time wishing the Brotherhood the most successful convention in its history.

H. M. NEVISON.

L. U. NO. 527, GALVESTON, TEXAS

Editor:

It was my intention to give a complete write-up of our trouble with the contractors on the new agreement, but was unable to get it ready and it is not quite settled yet.

We have about 20 contractors in this city which is entirely too many for a place of this size and we have about 12 or 14 signed up and there are four of the largest contractors that are using imported rats and only paying them $4 or $5 per day. Not even one of them is a good helper.

It has cost plenty money to the rat contractors by being forced to do a lot of the work over and lots of jobs that were taken away from them by not being fair.

We were sorry not to be able to get Brother Dan Tracy down here with us as he has had dealings with these contractors before and I feel that he will be able to get us O. K. again.

There is not a whole lot of work going on at present and we had to put a 90 day clause on to help our members and wish that the other locals will help us out by not coming down here until we get settled again. We are always glad to see new faces but we are not in a position to help others at present, and will put a notice in the WORKER after this gets fixed.

Brother Fred Sexton had to have a special hat made to order for him as he has the swell head on account of him being presented with a 9 pound baby girl. The local extends to him and his little wife best wishes and good luck and may they have lots more and all their troubles be little ones.

R. D. S.

L. U. NO. 569, SAN DIEGO, CALIF.

Editor:

Well, we just had our annual election and installed our new officers last meeting, getting a brand new set with a few exceptions. Brother R. A. Gloss went to the chair with a good majority, and Brother J. J. McCullough went to the vice president's seat easily. Brother S. V. Monsees got the recording secretary's job wished back on him with very little opposition, and Brother E. S. Teft is financial secretary with only one vote to the contrary. For treasurer, Brother C. O. Edmunds; first inspector, Brother Harold Curry; second inspector, Brother J. R. Cordova; foreman, Brother A. L. Thompson; trustee, Brother G. W. Adams; examining board, Brothers Earl Lake, C. A. Mothwang, Claude Cyren, J. M. Graham, and B. H. Fisher. Brothers J. S. Bullied and S. V. Monsees were re-elected to the executive board. The new members of the board are Brothers E. P. Kilcoyne, Claude Cyren, H. C. Johnson, C. A. Mothwang, and J. W. Graham. Brother Pat Kilcoyne was elected to the business agent's job with plenty of votes to spare.

The Brothers showed their appreciation of Brother H. C. Johnson's services in the chair for the past year by electing him to represent us at the next convention, with the "old war horse," Brother Charles Brown, running a close second. My job is to remind the Brotherhood that they have not torn the southwest corner of the map yet, and to duly inform you when they do.

We gave the new officers a brand new set of by-laws which will become effective immediately upon the International Office's approval.

This being my first attempt, I won't draw it out, but will say we have a very interesting fight on at present, concerning which I hope to have some good news in my next. Sufficient to say we have an assessment in effect of 10 per cent of all wages, giving you some idea of conditions in case any Brothers are thinking of drifting this way.

IVER KNUDSON.

L. U. NO. 854, BUFFALO, N. Y.

Editor:

Have a little broadcasting to do for 854, as we have always been crowing how good we were going along. I think some one threw a jinx in our path. Some of you boys have heard of the West Seneca and Scott St. engine houses; well, they are no more, they were shut down tight on June 1, throwing something like 18 electricians out of jobs, but thanks to the officers of System Council No. 103, and the N. Y. C. officials a consolidation of seniority was arranged and now we only have about 10 men out of work. That doesn't sound so bad but its bad enough for a local of only 40 members. Would like to hear from some of our Brother railroad locals if they need any train control or headlight maintenance men.

I am also taking this means to thank the Brother locals who have helped us put over the drawing we are running and hope the rest will remit as soon as possible if they are in a position to, as we sure can use every penny.

Our old friend and Brother, W. MacDermott, has again been elected to represent us at the convention in Detroit. Well, here's hoping things pick up soon.

C. N. SMITH,
Secretary, No. 854.

L. U. NO. 873, KOKOMO, IND.

Editor:

Conditions in Kokomo are about the same, hardly enough work for all the boys all the time. No big jobs in sight at this time.

Brothers Boorne and Thompson arrived home from California not much the worse for wear. They seem to prefer old Indiana to the land of flowers and sunshine. That only leaves one Brother, C. L. Hostettler, who is sojourning in the west. All the boys would like to hear from him, according to reports.

We are having very hot weather at the present time, too hot to write much, so will sign off for this time.

V. A. KRANZ.

L. U. NO. 1002, TULSA, OKLA.

Editor:

Just to remind you I am still on the job. Our boys are doing fine and our sick list is getting back to normal, except Brother Clemmons, he still wears the 20th century corset. The sun is pretty warm here but I haven't heard of any of the boys needing faint water.

Just to show you that the best is not too good for the linemen, we are meeting in the commissioners' assembly room at the city hall. The boys come out looking their very best and bring the choice smokes, except a few whose wives usually get sick on meet-

ing nights. I hope they will be able to cure them of those Tuesday evening spells after they have had an evening in one of those big easy swivel chairs. Now to the wives who boss their hubbies; most of you do and all should send hubby to meetings regularly and maybe he will get to be one of the clique and tell you something that is going on, in this way the whole family will get more out of the union.

I suppose this issue of the JOURNAL will be called the convention number and also, off the press just before Labor Day. Local No. 1002 with our delegate, Brother Claud Smith, are looking forward for the greatest report that Local No. 1002 has ever had from a convention delegate, but there must be a good convention to report about. How many and how tall they were don't do the I. B. E. W. any good. If I remember right only a few years ago we were levied an assessment just after a convention, and about all the report we got was how many and how tall and how long the foot rails were. Now, dear Brothers, don't think I am a grouch. No! far from that, we expect the Detroit Brothers to entertain loyally, but not to an extent that will prevent any Brother from attending every hour of the convention. If I understand the theory of a convention it is for L. U. representatives to get together and phase out the different questions for the betterment of the Brotherhood.

As for Labor Day, did the reader ever think what a greater per cent of members would be in a Labor Day parade if Labor Day was in the middle of the week, say Wednesday, so that two holidays would not come together? Then a great many of the rank and file would not have the opportunity to take their families and the old car on Saturday afternoon, drive out somewhere, back Monday evening and all the next week say "I was out of town." If a craft could not get along without working on a float Sunday it would only be two days hence and labor crafts don't very often build a float of perishable material, although many of them are decorated with ice cream, bottles, and roses, all of which are assembled just before the hour set for parade.

And don't forget, all crafts in the state will be in parade at Tulsa next Labor Day, if not all union men. We expect to have all crafts represented in the greatest Labor Day celebration Oklahoma has ever witnessed. We expect to show these oilionaires what a tremendous amount of man-power Oklahoma really has and who have helped to make them their millions. While we have been glad to do it, very few people realize how many hands it takes to produce one million dollars. I want to appeal to our Brothers in sister states if you must drive somewhere and don't parade with your own local, come to the Magic City. Besides the parade we will have plenty to eat, good horse races at the county fair grounds, good shady parks, plenty of Spavinaw water to swim in.

We expect to entertain all, big, little, old and young, and last, but not least, drink lemonade with the champions of Oklahoma.

There is a friend that sticketh closer than a Brother: Proverbs 18:24.

O. L. WOODALL.

L. U. NO. 1037, WINNIPEG, MANITOBA, CAN.

Editor:

Our epistle this month will be a short one. The scribe is in for fourteen days, condemned to spend fourteen days by the Southeastern shore of Lake Winnipeg on short rations, a place to sleep, millions of mosquitoes and fish flies, moths and bugs, a variety of which is unknown in the most uptodate list of such creatures. There is sand in your hair and shoes, bugs in the porridge, spiders in the bed, little spiders and big, fat healthy looking spiders chase each other frantically across the rafters, all intent on the same purpose as ourselves, I suppose, trying to make a living. For this is vacation time and when one lives in Rome one must do as the Romans do. The wife says she likes it fine, and well, the most of us are married and what's the use of arguing anyway? The kids are having the time of their young lives and when all is said and done that compensates for any little discomforts. I refuse to do any more work but I'll be back next month.

IRVINE.

About Color of British Eclipse

Reports of observers of the total eclipse of the sun visible in England on June 29, have been collected by the Royal Observatory, at Greenwich, and others. They disclose a curious and unexpected difference of opinion as to the color of the ring of light around the darkened sun. Most observers on the earth saw the inner portion of this ring as a flaming red circle around the black disk of the moon. On the contrary, the observers who saw the eclipse from airplanes, flying above the lower layer of clouds, describe the entire corona as silvery white in color. The astronomers are still undecided whether to regard this difference in the reports as due merely to some error of the human color sense or to look for some physical cause, either in the corona or in the earth's atmosphere. Unfortunately, it appears that none of the attempts to make color photographs of the eclipse were successful. The first color photographs ever made of a total eclipse of the sun, those made two years ago at Easthampton, Long Island, by Mr. Edward R. Hewitt showed the corona to contain all the visible colors, although the predominant tint was a silvery white. Possibly this silvery tint seemed so strong to the British airplane observers that they failed to notice the reddish tints also shown by Mr. Hewitt's previous photograph and seen by the spectators on the ground.

Opportunity for Amateur Science

Another opportunity for work by amateur scientists appears in a recent suggestion by the scientific correspondent of the London Times concerning sounds made by animals. Referring to the "singing" earthworms noticed recently by several scientists, the correspondent remarks that most animals apparently make small noises about which little is known. Some fish are reported to make noises, like hoarse cries, when they come to the surface. Some turtles make more or less loud clucks, sometimes not unlike the approving remarks of a hen when she has laid an egg. Antelopes emit different kinds of grunts. In a letter to the same newspaper a reader asserts that not only do many animals have such "voices," but their "accents" differ from place to place, just as human speech often does. In crossing Africa, this reader reports, he noticed that animals of the same species "spoke" differently as he advanced. It is probable that facts of considerable interest to science, about the art of speech and about the minds of animals, could be obtained by study of animal sounds, preferably recorded on a phonograph. Even the squeeks and chatter of household mice or rats might be well worth studying.

IN MEMORIAM

Charles Morency, Local 296

Whereas in the lamentable death of Charles Morency, Local Union No. 296, I. B. E. W., has lost one of its charter members, one who was always loyal to the organization; be it

Resolved, That the local formally express its sorrow at his untimely end and its sympathy for the members of his family; and be it further

Resolved, That the charter be draped for a period of thirty days, a copy of these resolutions be spread on the minutes and copies sent to his family and to the International Office for publication in the Journal.

JOHN E. KELEHER,
H. L. ARENBERG,
ORA A. KEITH,
Committee.

Charles Richter, L. U. No. 1156

We, the members of Local Union 1156, have been called upon to pay our last tribute of respect to our Brother, Charles Richter, who died very suddenly after a brief illness, and

Whereas we realize we have lost a true and loyal member; therefore be it

Resolved, That we, the members of Local Union 1156, extend our deepest sympathy to his bereaved ones; and be it further

Resolved, That we drape our charter for a period of 30 days as a token of respect to his memory, and that a copy of these resolutions be sent his sister, a copy spread upon the minutes of our local, and a copy sent to our International Journal for publication.

T. W. SEARS,
Press Secretary.

Joseph McKenna, L. U. No. 104

Whereas it has pleased Almighty God in His infinite wisdom to call from our midst our staunch Brother, Joseph McKenna, and

Whereas Local 104, I. B. E. W., has lost a true and loyal Brother; therefore be it

Resolved, That we extend to his bereaved family our heartfelt sympathy in their hour of sorrow; and be it further.

Resolved, That we drape our charter for thirty days in due respect to his memory and that we spread a copy of these resolutions on the minutes of Local 104, and that a copy be sent the official Journal of this Brotherhood for publication.

D. A. McGILLIVRAY,
Financial Secretary.

William Shield, L. U. No. 104

Whereas it has pleased Almighty God in His infinite wisdom to call from our midst our staunch Brother, William Shield, and

Whereas Local 104, I. B. E. W., has lost a true and loyal Brother; therefore be it

Resolved, That we extend our heartfelt sympathy to his bereaved family in their hour of sorrow; and be it further

Resolved, That we drape our charter for thirty days in due respect to his memory, and that we spread a copy of these resolutions on the minutes of Local 104, and that a copy be sent the official Journal of this Brotherhood for publication.

D. A. McGILLIVRAY,
Financial Secretary.

J. H. Scott, L. U. No. 213

Whereas the members of Local Union 213 of Vancouver, B. C., deeply regret the loss of our esteemed Brother, John Hunter Scott; and

Whereas Local Union 213 has suffered the loss of a loyal member; and

Whereas by his passing his associates have suffered the loss of a highly esteemed friend and co-worker and the wife the love and companionship of a good husband; therefore be it

Resolved, That we, the members and officers of Local Union No. 213, extend our heartfelt sympathies to his wife and relatives in their hour of bereavement; and be it further

Resolved, That our charter be draped for thirty days in respect to his memory, that a copy of these resolutions be spread on the minutes of this local and a copy sent to the International Office for publication in the official Journal of the Electrical Workers.

H. W. WATTS,
G. R. TOLHURST,
D. GUNN,
Committee.

Tony Herman, L. U. No. 36

It is with the deepest sorrow that we, the members of Local Union No. 36, I. B. E. W., pay our last tribute of respect to the memory of our Brother, Tony Herman, whom God in His infinite wisdom has seen fit to remove from our midst.

Whereas we deeply regret the sad occasion which deprives us of the companionship of so kind and faithful a friend and Brother, and though we bow to the Divine Will, nevertheless we mourn his loss; therefore be it

Resolved, That the members of Local Union No. 36 extend their heartfelt sympathy to his family and relatives in their hour of bereavement; and be it further

Resolved, That our charter be draped in mourning for a period of thirty days, in respect to his memory, and that a copy of these resolutions be sent to his wife, a copy sent to our Journal for publication, and a copy spread upon the minutes of our local.

C. A. BARR,
O. J. SEYMOUR,
Committee.

Angus McGillivray, L. U. No. 65

It is with sorrow that we, the officers and members of L. U. No. 65 record the death of Brother Angus McGillivray, who departed this life May 26, 1927. He came to us from L. U. No. 104, Boston, and had been with us and a neighbor L. U. for some time.

Whereas his passing was like—

"A flash of the lightning, a break of the wave,
He passeth from life to his rest in the grave."

Therefore be it

Resolved, That we extend our sympathies to his relatives; and be it further

Resolved, That in his memory we drape our charter for thirty days, a copy of this resolution be spread upon our minutes, and a copy sent to our official Journal for publication.

ALLEN D. AIKEN,
L. MULHOLLAND,
TOBY MEYERS.

John M. Carroll, L. U. No. 817

Whereas on May 22, 1927, Almighty God in His infinite wisdom saw fit to call to his eternal reward our dear friend and fellow member, John M. Carroll; and

Whereas it is fitting that we should place on record an expression of the loss we sustain in his death; be it

Resolved, That we tender to his bereaved family our most sincere sympathy and condolence and pray Almighty God to give them strength to bear their burden with Christian fortitude; be it also

Resolved, That these resolutions be entered in the minutes and a copy suitably inscribed be furnished his bereaved family and a copy be sent to our official Journal; be it further

Resolved, That the charter of Local Union No. 817 be draped for a period of ninety days.

JAMES D. HOGAN,
THOS. F. GRAHAM,
JOHN J. McCULLOUGH.

Clarence Hawkins, L. U. No. 2

We, as members of Local Union No. 2, deeply regret the sudden death of our true Brother, Clarence Hawkins. His many friends and fellow workers deeply regret the sudden and untimely calling from this earth.

It is with heartfelt sympathy that we extend our condolence to his family. May they in this hour of darkness be strengthened to know that we also bear their sorrow.

Resolved, That our charter be draped for thirty days and a copy of these resolutions be spread on the minutes of our local.

J. READY,
CHARLES FOGG,
F. C. JONES,
Committee.

D. L. Morgan, L. U. No. 339

Whereas the members of Local Union No. 339 deeply regret the loss of our esteemed Brother, D. L. Morgan; and

Whereas by the death of our Brother the local loses a true and loyal member; therefore be it

Resolved, That we, the members of L. U. No. 339, extend our heartfelt sympathy to his relatives; and be it further

Resolved, That the charter be draped for thirty days; and be it further

Resolved, That a copy of this resolution be forwarded to his relatives, and a copy be embodied in the minutes of our local union, and another copy be forwarded to the editor of the official Journal for publication.

BROTHER CHAS. DOUGHTY,
BROTHER W. HUARSTON,
BROTHER A. FARROW.

DEATH CLAIMS PAID FROM JULY 1, 1927, INCLUDING JULY 23, 1927

Local	Name	Amount
I.O.	Christ Jensen	$ 1,000.00
I.O.	Hugh Murrin	1,000.00
437	Wm. Waldron	475.00
3	Knud Steenman	500.00
134	Albert Krueger	475.00
134	Walter Jung	825.00
134	Henry Smith	1,000.00
27	P. F. McDonald	300.00
532	Adolph Rivers, Jr.	300.00
134	Hugo G. Wede	1,000.00
134	F. W. Ulrich	1,000.00
134	Michael Ford	1,000.00
17	F. L. Elmer	1,000.00
125	Gus Hermansen	1,000.00
124	P. C. Fish	1,000.00
402	Richard A. Riis	825.00
36	Tony Herman	650.00
697	Harold Cameron	475.00
108	F. B. Garrity	300.00
38	Joe Naymik	650.00
	Total	$14,775.00
	Death Claims paid from July 1, 1927, including July 23, 1927	$ 14,775.00
	Death Claims previously paid	1,064,336.10
	Total claims paid	$1,079,111.10

NOTICE

To all local unions:

During our strike and trouble with the contractors in our city we had four members to stay on the job when the strike was called. These men were called to the meeting to answer charges for violating the International Constitution and never showed up.

These men were expelled from the local and had a fine assessed on them. This is not near good enough for these supposed men, but it is all we could do with them, so if any of them come your way please remember this—

Robt. Lloyd (Card No. 286750) fined..... $400
Roy Lloyd (Card No. 286782) fined..... 300
John Crawford (Card No. 188198) fined.. 300
Geo. Markel (Card No. 601212) fined..... 200

R. D. SCHOONER,
Recording Secretary, Local No. 527.

MODERN DYNAMOS AND A POOR BOOKBINDER

(Continued from page 413)

medium which acted as the transfer agent. He assumed that the condition of the iron known as magnetism was not confined to the iron, but that it permeated space. Or in other words that this hypothetical medium surrounding the magnetized bar was in a state of stress and furthermore that an electric current in a wire likewise produced a stress in the medium and the resulting force was due to the interaction of these two stresses. This was an entirely new concept which had a profound effect on the future development of electrodynamics, just as Newton's introduction of the concept mass gave an impetus to the science of dynamics. As Poincaire the French mathematician said mass is something the physicist needs in his business, so the concept of the ether, on all prevading medium, was needed to coordinate magnetic and electric phenomena. Furthermore as the concept of mass seems to have outlived its period of necessity so the concept of the ether is being displaced by a more general concept. How well the concept of the ether has served science will become more evident when we see how by its aid different phenomena were harmonized.

By this series of ingenious and instructive experiments not only were magnetic phenomena shown to be only manifestations of a property of electricity in motion, but they also had a most practical significance. They showed how a force could be transferred and cause mechanical rotation through the agency of a non-material medium. A medium which according to the theory of relativity does not exist. This apparent paradox is, however, not the only one in physical sciences, nor does it vitiate conclusions based on such premises. Whether such an imponderable medium exists or whether it is the figment of Faraday's fertile imagination does not eliminate the electric motor from the service of man. That is a reality whose beneficent influence is felt in every industrial establishment.

The outstanding achievement of the one-time bookbinder's apprentice and later the recipient of not less than 95 honorary titles and orders of merit was the harmonizing of Arago's rotations with the other electromagnetic phenomena, namely, the discovery of electromagnetic induction. Faraday reasoned that if a steady current of electricity could and did produce motion of a magnet, the motion of the magnet ought to produce a current. But again he was confronted with the difficulty of devising apparatus to test his conclusion. The device finally adopted was a coil of wire attached to the terminals of a galvanometer, a detecting device made possible by the discovery of Oersted and the further investigations of Faraday. Again, how new problems and applications grow out of new discoveries. It was impossible to discover electromagnetic induction without a suitable detecting device, and conversely the discovery of Oersted made possible and ultimately certain the discovery of the generation of an electric current in a coil by the introduction of a permanent magnet into the coil. Having shown that relative motion between a magnetic field and a wire produced an electric current the next step was to show that a varying current in one coil produces electric currents in neighboring coils, and the foundations of electromagnetic theory and of the electrical industry were firmly established.

Not only did Faraday make possible modern electrical machinery, he also showed the unity of nature's language and out of dissociated words produced whole sentences. Oersted's Arago's and Ampere's apparently different phenomena were by the supreme intellect of Faraday shown to have one underlying cause, and that they were but different manifestations of one and the same thing. The function of true science is not merely to make possible machines, but a higher duty is to bring into orderly and harmonious relations the elements of man's world.

"In this interminable wilderness
Of worlds, at whose immensity
Even soaring fancy staggers,
Here is her fitting temple."

—*SHELLEY.*

Mysterious Radio Echo Ascribed to Wave

Radio echoes that probably travel entirely around the earth before they are heard have been noticed by British radio amateurs who listen to the powerful transmitting station PCJJ at Eindhoven, Holland. This station has been relaying English broadcast programs and listeners have heard two distinct sounds for each note; one a fraction of a second later than the other, as though some kind of echo were present in the transmitting studio. A similar effect is heard sometimes in music halls the acoustic properties of which are bad, one sound coming directly from the singer or player and the echo of this sound arriving an instant later from the walls or ceiling of the room. In the case of the PCJJ radio programs, such echoes originating in the broadcasting studio have been proved not to occur and it is believed that the second sound heard by the listeners is due to a radio wave which travels around the earth. It is thus delayed a fraction of a second, so that it arrives slightly after the wave which crosses the channel directly from Holland to England. The speed of radio waves is believed to be so great that such a wave would pass entirely around the earth in about one-seventh of a second. This would make the radio-echo that much later than the direct wave; a difference corresponding to a real echo cast by a wall about seventy-five feet away.

Man was meant to go right of his own volition; there is no coercion.—*Sir Oliver Lodge.*

Detects Either Fire or Flood

The tiny electrons which operate the vacuum tubes of radio sets have been used by Mr. D. D. Knowles, of the Research Laboratory of the Westinghouse Electric and Manufacturing Company, at East Pittsburgh, Pa., to make what is said to be the world's most delicate electric valve. A pressure of a few ounces from the hand of the engineer of a locomotive opens or closes the valve which controls the far greater pressure of the steam and thus the motion of the gigantic machine. Similar electric valves called relays, are known, in which a very small electric impulse may be used to turn on or off far larger currents. In a locomotive the engineer controls some thousands of times the power which his own muscles could create. In some electric relays the power controlled is 10,000 or 20,000 times the power of the controlling signal. Mr. Knowles' new electron device breaks all these records, for a tiny electric signal admitted to the electrons inside it will turn on or off an electric current approximately 100,000,000 times stronger. The new device can be arranged to detect and report other things than electricity. For example, it is possible to install one of them in a dwelling or other building in such fashion that it will ring a bell or send out any other desired warning if either the house catches fire or if the roof leaks and lets in a few drops of water.

French Scientists Study Shimmy

The shimmy has occupied the attention of no less serious a body than the famous Academy of Sciences, at Paris, one of the oldest and most dignified scientific assemblies in the world. The shimmy in question was not, however, the half-forgotten dance of American cabarets but the quivering vibration which many automobiles take on, when driven at some critical speed, a vibration for which automotive engineers use the word "shimmy" as a technical term evolved from what was once a metaphor. M. D. S. deLavaud presented to the Academy a possible way of calculating, in advance, the speed at which a car of given design will be apt to develop this trouble. This can be done, he asserted, by using physical theories of vibrations similar to those worked out for the vibrations that produce sound or for the simpler back-and-forth vibrations of a clock pendulum. Two fundamental vibrations are important, M. deLavaud believes, in the automobile shimmy problem. One is the vibration of the wheels; the other is that of the axle. These two are fixed, in turn, by the sizes of the parts and by the speed of the car. It is possible, therefore, to determine at just what speed a car of a certain design will begin to dance.

FINGER OF PRESENT POINTS FORWARD 50 YEARS

(Continued from page 407)

"Vitamines seem to be to food what the so-called soul is in man, and just as it seems impossible to produce a mechanical automaton capable of all the functions of an intelligent human being, so it seemed impossible to produce artificially a diet which could replace the vitamine-bearing natural foods.

"But recently it has been found that certain vitamines, at least, may be produced artificially. Food lacking in the vitamine necessary for prevention of rickets may be made antirachitic by raying with ultra violet or cathode rays.

"What is true of one vitamine may prove true of the others, and then the full nutritional value of natural foods should not only be equaled but surpassed by products of chemistry. That the desired flavors should be easily attained is indicated by the achievements in the perfumer's industry. Synthetic food may surpass the products of nature as artificial silk surpasses cotton.

"In short, the food factory may supersede the farm, even as the woolen mill has surpassed the spinning wheel, and mechanical refrigeration is superseding natural ice. Electrical energy, instead of playing the minor role it now has in agriculture, may become the chief agent in feeding the world."

Gives Service to Men

Commercial manufacture of foods treated to impart synthetically the illusive vitamine D is already under way and it is worthy of note that Professor Harry Steenbock, of the University of Wisconsin, who labored for many years to perfect the process, has refused to profit financially himself by his service to humanity. Through the ultra violet ray vitamine D is to be added to cereal breakfast foods by a well-known manufacturer and the royalty of $60,000 a year is to go to the university instead of to the professor, by his own wish. Exclusive rights are not given to the manufacturer except in his own field and other companies may bid for rights in filling their particular foods with vitamines.

Electricity and the ultra violet rays have been the means of amazing new discoveries. Not only artificial food vitamines but even life itself has been created by the ultra violet rays. Chemists are tampering with the very stuff of life, trying to tear away the veil of mystery that surrounds the awesome circumstances of birth and death. This much they have accomplished:

A live, swimming fish was created by placing the egg of a sea urchin under powerful ultra violet rays for five to ten minutes, by Dr. Ralph Lillie and Dr. M. A. Hinrichs, of the University of Chicago. The egg was not merely hatched by the rays; it was fertilized; life being engendered in the female egg without the presence of the male sperm and the fish created was actually "fatherless" except for the rays.

Similar experiments on the embryo of chickens with the rays gave rise to a curious, inexplicable freak. The embryos grew into deformed chicks, each of which was born with several independently beating hearts and only one eye.

Sorcerers of the middle ages compounded magic in vain in their efforts to create an artificial human being. Probably modern scientists will not wish to make synthetic men to live in their synthetic world, but it is certain they will try to answer humanity's age-long cry, What IS Life? What makes us live? Where does our life go when we die?

Astronomers say they have bounded the universe, declare it is not the boundless, infinite abyss men once believed, space is limited and the stars may be counted even if in their billions. Conjectures multiply about the possibility of life on Mars and Venus. Interplanetary travel and discovery is one of the most brilliant dreams of the future.

And what a spurt air travel has taken in the last few months, since the brilliant exploits of Lindbergh and Chamberlin! There's little doubt that travel of the future will be in the air. In a few years airships will have become so cheap and so safe that every family or individual who can afford to will travel via air. Even now the Moth, a small plane with wings that fold so that it can be parked in a small hangar, is being offered for sale, on the installment plan, in London! Soon, perhaps, automobiles will be as out of date as the old one-hoss shay, roads, railroads, trolleys, boats, all deserted, whilst the population skims in its flivverplanes through the airy highways of the sky that never call for paving.

Air War Again Looms

The possibilities of aerial travel are not all pleasant nor inspiring. War in the air is an appalling possibility, frightful, devastating war unleashing all the horrors that chemists are even now secretly storing up. In such a war women and children behind the lines will be no safer than the actual fighters, for through the airways will hurtle the planes and blimps carrying their powers of destruction done up in terrific explosives, and creeping gases, to destroy cities and annihilate populations. Sound waves and light rays may be called in to batter down and destroy. No living thing on the earth will be safe and even those who creep into the cellars and dugouts to hide may perish in the penetrating gases.

What Will the Future Mean to Labor?

When food is made in factories, what will become of the farmers? When power is generated by machines hitched to sun, wind or radium, what will happen to the coal miner's pay envelope? Tremendous changes are looming ahead, half seen in the fog, and we must be ready for them. If labor is strong enough, in numbers and leadership, it will be able to control the situation, absorb the surplus workers by cutting down the working time to a few hours a day per man, while the scale of commodities received for a day's labor should constantly increase as the machines grind out products with constantly gathering rapidity. Perhaps some new form of unionism with co-operation in management may arise. At any rate it is imperative that the plants be organized now, before the entrenchments of capital and monopoly grow too strong.

If they should——

Figure to yourself a world where labor is an almost worthless commodity, where the vast army of unemployed grows more numerous year by year as machines become more and more nearly automatic, and bands of idle, starving men roam the face of the earth, homeless and desperate.

Science is fashioning for us a new world and labor should help to shape it toward a millennium on earth. These should be our aims: no more famines, pestilence or wars; abundance for everyone and everyone sharing in the abundance.

BRAVE OLD DAYS OF BOOMER MADE TO RELIVE

(Continued from page 398)

Carroll and tell him that Umbrella Mike sends his best regards."

Down at the tank the Sunset Limited or perhaps only a slow drag has stopped for water, so our friend borrows a fresh chew and with a hasty adios makes the second blind, or forces an end door regardless of consequences.

So Much a Month and Beans

After doing a couple of hundred miles more he decides it's time to look for a little work, so blows down to the light plant, hits the boys up for breakfast and the super for a job. Maybe the light isn't hiring anybody, so as a last resort he turns to Mom Bell, who has nothing to offer but a toll-line job at so much a month and beans. Not so good financially, but the sticks aren't high and it's an excellent chance to catch up with some of the postponed meals, especially around threshing time when the farmerettes prepare such wonderful chuck that it brings back memories of home and mother.

About ten days later the old boy awakens with a grouch or maybe a thirst, and right then and there the job goes hay-wire. Perhaps he doesn't like the color of the gaffer's tie, or has heard of a new high-line job farther down the pike, but, anyway, the whole world is wrong and the pick-handle has to use the educated stick. So Dizzy heads for the nearest town, intending to buy a clean black shirt, at the least, but right next door to the shirt-shop is a gin-mill and with the thought one little snifter won't do any harm, he postpones the shopping. After the fourth libation the new rags are forgotten, for why buy clothes with whiskey so cheap and crap games so frequent?

Seven drinks later he tires of battin' on slats or cuttin' 'em hot and sighs for other worlds to conquer. It is then that the lady known as Lou enters the picture, and bye-bye to the remains of the bank roll

Remorse Does Not Last Long

"It is no time for mirth and laughter
In the cold, gray dawn of the morning after."

So he frisks himself, hoping to find a stray dime, and wonders what became of his tools. Locating them, he bums a half-pint and hits the endless trail again, swearing that it's the last party for him. But time changes all things and heals all wounds, so a few weeks later, with another pay in his kick, he does the same thing over.

And so on to the end of his days he is always on the go, looking for that mythical perfect job, living for today only and letting the morrow take care of itself.

L'envoi

I have tried to portray the old-time coast-to-coast Boomer as I knew him, not the interurban-riding and automobile-hopping tourist of today. The old breed is slowly disappearing, due to the wheels of progress. Years ago the man with the oldest tools and roughest appearance got the preference, but today it is the guy with the front who gets the job.

The average boomer is a dyed-in-the-wool unionite, carrying the card because he wants to, not because he has to. He is a master workman, broadminded, perhaps a little radical at times, and generous to a fault acknowledging no man or corporation his master.

There are many who look with disgust on the floater, but unless they have fought and licked that insidious disease commonly called the wanderlust, they should keep their opinions to themselves, as in the parlance of the day, "They ain't been around much."

Chasing the elusive rainbow may not be socially elevating or financially successful, but, as Bill Adams, philosopher and globe-trotter, says: "It gives us something to talk about." And that is a common bond which cements the ties of friendship and good-fellowship within the hearts of men the world over.

It is interesting to watch the young chap who has been admitted to the inner shrine as he listens to the tales of the old-timers. From the expression on his face it is readily discerned that he thinks said tales are a pack of colossal lies—and maybe some of them are.

Organization is the only way in which workers secure a voice in the conditions and terms under which they work.

STRUGGLING YOUTH OF UNION VIVIDLY SKETCHED

(Continued from page 401)

1914. During this time the Affiliated Labor Unions met at the Wedge House, located at Leffingwell and Franklin Avenues, and later in their own hall on the northeast corner of Leffingwell and Washington Avenues. The local had leased the property and remodeled it. This venture was another financial failure, they finally having to buy their release. In 1915 the local again moved to the Painters' District Council Hall and remained there until about 1923, and from then on we have been scalliwagging around hopping from crag to crag, with no definite object in view.

At the outbreak of the war wages were $6 per day, the highest in the United States. During the war some work was carried on in the east at wages higher than No. 1.

July 15, 1918, our wages went to $7 per day; July, 1919, to $8; July, 1920, to $10, and 1922, to $12, which we have maintained to the present. We have just passed a prosperous two years and the outlook is quite fair. The writer believes that most of the dissention of No. 1 is due to the unwholesome meeting places in which we meet. There is a feeling of dissatisfaction in any stuffy, hot, smoky, ill-lighted, ill-ventilated meeting place, and we trust that No. 1 will climb from these surroundings and seek that which is due professional skilled tradesmen.

RADIO

(Continued from page 425)

to pass the radio frequency energy in the plate circuit around the headset and B battery. When no by-pass condenser is in the circuit the resistance of the B battery and headset is sufficiently high to prevent oscillation. As the capacity of the by-pass condenser is increased a point is found at which sufficient energy is passed through the condenser, instead of through the headset circuit, to cause the tube to regenerate. If additional capacity is provided in the by-pass condenser the tube will regenerate strongly and will finally break into oscillation.

When building a set of this type the number of turns in the tickler and the distance between tickler and secondary should be so adjusted that when the secondary condenser is at its maximum capacity setting the by-pass condenser will also be at or near its maximum in order for the tube to oscillate. If this adjustment is made the tube can be made to regenerate and oscillate readily when the secondary condenser is at zero.

(This department is conducted by special arrangement between the Electrical Workers Journal and the American Radio Relay League, Inc., the national organization of radio operators and experimenters, through Science Service.)

CALENDAR OF ELECTRICAL DAYS SINCE LAST CONVENTION

(Continued from page 406)

was carried beyond the record rating of previous years. The demonstrated efficiencies of the oil-air pressure method of cooling resulted in its application to a considerable number of units of exceptional capacity. The system of load ratio control was made automatic in operation through the medium of contract-making volt meters.

Street lighting continued to be characterized by an increasing intensity of illumination, culminating in the installation provided for State Street, Chicago, which made it the most brightly lighted business thoroughfare in the world.

Electric Refrigeration

A marked increase in the manufacture and sale of electrical apparatus is reported. In 1926, the Nation's Business estimates, 400,000 electrical refrigerator units, valued at $150,000,000, were manufactured. An increase in electrical energy used to control power stations of $3,000,000 is estimated. A tremendous expansion of this business is predicted. Improvement in design has been made.

Radio

Experiments of world-wide scope were continued by means of a developmental radio station utilizing the largest and highest power voltage kenotron rectifier equipment ever constructed. New types of transmitters were produced on a commercial scale for operation at high power and short wave lengths, and special testing apparatus was devised to insure a high degree of reliability in their service operation. Carrier current was for the first time used to control a street lighting system, and numerous ingenious applications of the vacuum tube were made in the solution of central station operating problems.

Research

The achievements in research included a larger and more powerful cathode ray tube, with which a great variety of experiments were conducted. Both apparatus and technic were evolved so that it was possible to commercialize the use of hydrogen and other gases in connection with electric welding. A method was developed whereby ordinary illuminating gas could be substituted for acetylene in plate cutting, riser cutting in steel foundries and similar work on scrap materials. While this latter achievement is not electrical, it is of considerable practical value to the electric manufacturing industry.

As the chief scientific advances during 1926, Dr. E. E. Free selected five items. First, in his opinion, are the investigations indicating that matter and light are fundamentally the same, atoms being merely a special condition of light rays. This viewpoint has been developed mainly by Professor E. Schrödinger, a German mathematician, and by Dr. A. C. Lunn, of the University of Chicago. Cited as second was the work on the theory of catalysis, credited mainly to the scientists of Princeton University and of the Fixed Nitrogen Laboratory of the United States Department of Agriculture. Catalysis is the process involved in some of the new methods of making artificial gasoline from coal and of nitrate fertilizers from air. As his third item, Dr. Free selected the experiment of Dr. Fritz Paneth and Dr. Kurt Peters, two German physicists, which is believed to have demonstrated the conversion of atoms of hydrogen into atoms of helium, its importance being the hope that it will yield a clue to atomic power. Mentioned as fourth was the work of Dr. H. Bechhold, another German, on living germs too small to be visible even in the best microscopes. The fifth item was an American discovery, that of other universes so distant from ours that light needs 140,000,000 years for the trip. This was made by Dr. Edwin P. Hubble, of Mount Wilson Observatory.

CONFERENCE METHOD OF SETTLING DISPUTES PAYS

(Continued from page 410)

able places—including such important points as Chicago, Boston and St. Louis.

In every instance where Council principles have been applied to industrial disputes, there has been no cessation of work, and no loss of time, wages or profits to either employer or employee. The results achieved have more than justified the Council's existence, and those who have participated have no hesitancy in recommending similar tribunals for other industries. For other closely intensified trades and industries having like machinery to settle disputes, the usefulness and benefits of such tribunals could and undoubtedly would be greatly enlarged.

LOCAL UNION OFFICIAL RECEIPTS FROM JUNE 11 TO JULY 10, 1927

L. U.	Numbers	
1	833601	833835
1	705297	705300
1	707101	707160
2	753738	753750
2	47251	47403
4	713226	713250
6	747291	747412
7	913286	913500
7	854251	854270
8	580871	580890
10	14631	14667
12	499789	499798
14	877824	877849
15	129631	129649
16	11366	11380
17	858591	859120
18	36751	36800
18	820371	820500
20	954991	955089
21	634667	634690
22	770490	770616
26	3854	4076
27	78415	78425
31	173133	173162
34	773804	773895
35	530307	530402
36	500921	500960
39	928371	928500
39	882751	882904
40	879791	879887
41	823754	824024
42	726058	726081
43	922733	922902
44	738168	738187
45	743414	743424
46	815871	816000
47	456334	456377
48	755126	755310
50	607384	607420
51	703121	703155
52	851251	851672
52	948515	948750
53	754099	754138
54	678001	678019
55	774862	774886
56	552667	552702
57	133471	133492
58	660561	660750
58	804001	804400
59	739981	740216
60	752081	752143
62	532413	532448
65	853021	853220
66	835281	835395
68	857376	857394
73	656793	656912
75	7406	7410
76	675424	675505
77	619651	619779
77	618715	618831
77	618105	618150
78	842435	842443
79	960751	960833
79	38356	38400
80	32893	32940
81	903396	903453
82	907678	907800
84	954223	954675
86	956771	956950
87	31833	31849
88	897151	897171
89	166904	166909
90	439393	439443
91	40622	40634
93	684066	684096
94	717021	717032
95	558134	558145
96	950285	950387
98	934501	935320
100	554411	554419
101	573925	573969
102	955756	955943
103	594831	596250
103	848251	848620
106	584913	584970
107	676258	676297
108	436801	436840
109	712269	712280
110	36001	36094
110	756718	756750
111	41572	41582
112	436451	436462
113	368118	368152
116	668126	668261
117	723919	723945
122	785896	786000
122	39751	39940
124	834511	834750
124	35251	35254
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1101	459194	459198
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59—540106-110.
62—532412.
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200—739471-475.
233—36395-36399.
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568—847579-580.
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572—709281-282.
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58—803132, 178, 291, 368, 660686.
65—853059, 081, 145, 180-181.
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Air Tour for Two Costs Little

The enormous reduction in the cost of airplane travel which has been accomplished in recent years is indicated by figures recently announced by the British aviation enthusiast, Sir. John Rhodes, for his recent pleasure trip, made with one passenger, in a small airplane of the "Moth" type. The trip covered 1,500 miles in France and Belgium. Careful records were kept of all expense for gasoline, oil, landing charges, housing for the airplane; even for customs fees. The total cost was less than $70 and the gasoline showed a record of over fifteen miles to the gallon. The average cost was only four and one-half cents a mile, mileage being measured on the ground. As two persons were carried, this compares favorably with the cost of travel by rail. Undoubtedly tours of this kind are greatly facilitated by the large number of well-organized landing fields which exist in western Europe. It is the relative scarcity of such fields in the United States which probably constitutes the greatest obstacle to private flying for pleasure on this side of the Atlantic.

DETROIT CONVENTION, 30 YEARS AGO, SETS CONTRAST

(Continued from page 402)

"It is not necessary at this time to enter into a citation of the advisability or necessity for the introduction of the eight-hour workday. Circumstances and conditions have impressed all alike that this most essential demand shall be enforced at the earliest possible moment. The only question is as to the practicability of its enforcement upon a given date, and that has been decided in the affirmative by the unanimous vote of the delegates to the Cincinnati convention, in which your national body, too, was represented. At least, all organizations, should place themselves in a position so that the opportunity, should it arise, may not be lost or neglected by a lack of proper action and preparation.

"The concentration of wealth, the constant introduction of machinery in industry and commerce, the enormous number of unemployed workers, all demand that some action shall be taken which shall give relief to the overworked and employment to those without it. The workers, all of them, are looking with a great deal of expectancy to our present movement, and we have no right to disappoint our own membership nor give despair to the hopes of the toiling masses of our country. It may be true that we cannot achieve at once the success we desire, but we shall leave no opportunity untouched or untried to the early enforcement of this great measure of relief.

"I trust, therefore, that your convention will place itself upon record in favor of this movement, and bring cheer and comfort to countless thousands of unemployed workers, brighter prospects for those employed and give an impetus to the great cause for which our movement stands. Trusting, too, that your convention will be entirely harmonious and successful, I am,

"Fraternally yours,

"SAM'L. GOMPERS,
"President American Federation of Labor."

A total incapacity to doubt may make for evangelical sanctity and moral righteousness; it certainly does not make for general culture and aesthetic understanding.—*Robert Nichols.*

My constitution must indeed be strong to have been able to withstand fourteen doctors.—*Henri Bergson.*

TRUST your official JOURNAL. Every issue is carefully prepared to serve you. Statistical data is sifted; authorities read and culled; important leaders interviewed; hundreds of periodicals examined and clipped; able writers employed to put on your table every month a publication that is vital, interesting, and reliable. Don't get into the costly habit of depending upon other news sources for your contacts with the labor movement.

THE day of the great individual is past. In the present day of organization Napoleon would have been lucky to attain the rank of Brigadier General. In the World War the allies moved steadily on to victory only after they had coordinated their forces into one great army. Today Mussolini is simply the mouthpiece of the Fascist Organization. The silent big business organization of Italy that speaks and acts through him. Workers must absorb the lesson taught by the minds of our time that only by organization and continual effort can labor secure recognition and justice in the industrial world.

JAMES P. NOONAN, *President.*
International Brotherhood of Electrical Workers.