

# The American Economic Review

VOL. IX, No. 1

SUPPLEMENT

March, 1919

Papers and Proceedings

of the

Thirty-first Annual Meeting

of the

American Economic Association

RICHMOND, VA.

DECEMBER, 1918

**Publication Offices : Princeton, N. J. and Ithaca, N. Y.**

**Subscriptions : American Economic Association, Ithaca, N. Y.**

SECURING THE INITIATIVE OF THE WORKMAN  
INDUSTRIAL AND NATIONAL ORGANIC UNITY A NECESSITY FOR DE-  
VELOPING INDIVIDUAL INITIATIVE

BY ROBERT B. WOLF, M.E.

*The Emergency Fleet Corporation*

The present labor unrest is the natural result of diverting the creative instinct of the workmen from *constructive* into *destructive* channels. The repressive form of most of our industrial organizations is responsible for this state of affairs.

The remedy lies in making our industrial organizations democratic so that the workmen will have a voice in the determination of working conditions.

Until we have changed the autocratic character of our industries (which really dominate the political situation), it will be impossible to have a democratic society.

By a democratic society I mean that form of social structure which encourages and aids the growth of the creative spirit in man, expressing itself through the trades and professions and the organized industries.

This I do not believe can be accomplished until the executive, legislative, and judicial functions of the government cooperate with the trades and professional associations and industrial organizations to give greater opportunity for the free expression of individuality. When this is done we shall have an organization of society based upon respect for the individual, which is the only true democracy.

Not until the workman, however, is conscious of his own part in the whole production process will he become interested in his work and begin to think and to plan how to improve the operating conditions. Improvement implies change, but no change can come except by expression of creative effort—either generic or individual. *Generic* change is the kind exhibited by nature in all of her infinite activities, and, as modern science has conclusively demonstrated, operates always according to exact predetermined law.

Modern industry, however, while it must, of course, conform to the natural laws inherent in the raw materials, is primarily concerned with *individual* creative effort. Industry is artificial and has to do with conditions which do not occur spontaneously in nature; in other words, the creative power which sustains our civili-

zation and prevents it from reverting back to nature resides in the originating, selecting, and adapting faculty of the human intellect, but—and here is the crux of the whole matter—this faculty of mental creativeness is *not* confined to a few individuals who are in charge of our industries. It is common to all mankind. Proof of this statement lies in the fact that the majority of our industrial leaders have risen from the ranks.

What right have we then to expect a high development of productive (creative) effort when we limit the intelligent handling of materials and forces to the few who autocratically claim it as their right to dominate the wills of others, especially when their contact with the actual work, because of the increasing size of our industrial organizations, is becoming constantly more remote? Of course, we must have leaders; otherwise there can be no organization, but leading is vastly different from driving. "Teach, don't boss" is a sign we see posted in industrial plants quite frequently in these days, and it is one of the healthy "signs" of the times.

When our industrial leaders become our industrial teachers, then will "the will of man" be a much greater factor in the universal creative plan.

Just so long as the majority of workmen are using their brains merely to direct their bodies and are doing work which requires little or no thought, just so long shall we have industrial unrest. Man is not an animal, but a free, self-determining *mental* centre of consciousness who has the power to work *with* or *against* the natural law of evolution; that is, *constructively* or *destructively*. If he had not this power, he could not become conscious of the law, for he must know its negative as well as its positive aspect. He can only learn the negative, however, by a process of trial and error. Naturally then, without an opportunity of first-hand experimentation in industries, there can be no real intelligent industrial growth. The autocratic industrial methods of Germany, which caused her notorious lack of inventive spirit, have taught us this. We must not fail to profit by the lesson.

The short-sighted employer may prevent his employees from using their brains at their work, and, because of this, hold their compensation down to a low level. There is no advantage in so doing, however, for the result of the attempt to repress individual initiative is simply to deflect creative power into destructive channels.

This autocratic domination of the wills of the workmen, by

preventing free self-expression, is the cause of practically all the destructive forces, exhibiting themselves in certain phases of Bolshevik and I. W. W. movements. The creative process in the individual cannot be suppressed—it can only be deflected (perverted) into useless or, worse still, destructive channels.

A comparison between the human being and a steampower plant illustrates what I mean. The internal energy of the power plant comes from properly bringing together fuel, air, and water. The energies released from these elements result in steam pressure, which can be conducted to the cylinders of the engine. If, however, the steam pipe leading to the engine becomes plugged, and we continue to feed fuel into the boilers, we must allow the steam to escape and dissipate itself into the surrounding atmosphere. The word dissipate is significant when applied to men. If this relief be not provided, the accumulated pressure will build up and the whole plant will explode and destroy itself, and may destroy, at the same time, many other devices that are useful to man.

The employer who closes the avenues to constructive work, by preventing the employee from consciously expressing his individuality in his day's work, is no more intelligent than the engineer who shuts off the steam valve leading to the engine and sits on the safety valve of the boiler.

Natural laws must always operate, and if disobeyed, destruction is sure to follow. Providence gave to man the power to work *with* the natural law or *against* it, and for this reason the exact operation of this law had to be predetermined. The great law of evolution is for man's benefit, for nature serves him in proportion to his knowledge and intelligent use of her laws. He could *not* increase his knowledge of the law, however, if it changed from day to day.

The higher creative power in man is a mental process, and lies in his intelligent adaptation of means to ends. He cannot create matter or force, but once he has learned how nature works, by study and conscious observation of the laws underlying natural phenomena, he can tell what must be done in order to create combinations of material elements that do not occur spontaneously. This is what the horticulturist does. He studies nature's laws *in action* and then works *with* them. For instance, the wonderful juicy peach of today was literally created by the specializing faculty of the will of man. An uncultivated orchard will revert, however, to its original wild state when not attended by man. We are

beginning to realize through the aid of modern science the truth of the world-old proverb that "nature unaided fails."

I will give a different illustration from the wood-pulp industry. A number of years ago the cooks who handled the digesters in which the wood chips are disintegrated discovered the natural law that, if the strength of the cooking acid was increased, we could cook in a shorter time. Because of the careful records kept by our organization, this information, which was available to the acid makers, enabled them to recall the fact that we were able to make stronger acid in winter than we could in summer. From this we saw that, if we could create by artificial means the same low temperatures in our absorbing systems in summer that we had in winter, we should have a uniformly strong acid all the year around.

As natural laws never change, we, of course, could prophesy what would happen if these temperatures were reduced, but, what is more important, we could calculate the size of the refrigerating plant needed to exactly reproduce the winter conditions during the summer months.

Because of this accumulated knowledge of natural law, we installed a refrigerating plant which cost us nearly \$60,000, and paid for it out of the increased earnings in about three months.

While I could give many other illustrations of a similar nature, this one illustrates what is meant by the creative power of the intellect, and how, while man does not create material substance, he does create combinations of material substances which could not exist without the aid of his powers of observation and selection.

We cannot logically accept the point of view that man's only mission in life is to reproduce his kind; so, obviously, his creative power must have another outlet. What other outlet can there be than that of mental creativeness, illustrated above?

The more progressive manufacturers are realizing this, as indicated by a recent utterance at the Chamber of Commerce meeting at Atlantic City by one of the largest employers of labor in the country. What he said was:

"I believe that that man renders the greatest social service who so coöperates in the organization of industry as to afford to the largest number of men the greatest opportunity for self-development and the enjoyment by every man of those benefits which his own work adds to the wealth of civilization."

This quotation indicates clearly that industries are beginning to develop along truly educational lines, which, of course, means fur-

nishing men throughout the entire production division with progress records of their own individual operations, as well as educating them to a knowledge of the relationship of their work to the finished product. This is being done in a number of manufacturing plants with great success, and, furthermore, it is being done in many instances in coöperation with organized labor. Naturally, this insures a democratic handling of the situation, for the workmen have a chance, through their unions, to have a voice in the determination of the manufacturing standards. The great problem in industry today is how these organizations can be brought to realize that their members will only attain industrial freedom and material prosperity when they direct their main energies to the creation of wealth instead of to its distribution. Capital is simply a medium through which society can give material compensation to the individual for services rendered. It is an effect, not a cause.

Ex-President Taft, in an editorial in the *Philadelphia Public Ledger*, recently pointed out that: "Organization of labor has become a recognized institution in all the civilized countries of the world. It has come to stay; it is full of usefulness, and is necessary to the laborer."

This being the case, is not the employer who opposes the movement extremely short-sighted?

A manufacturing industrial unit divides naturally into three main divisions—supply, production, and administration. For convenience in presenting the subject, I have symbolized these divisions on the accompanying diagrams, so it will not be necessary to incorporate in the text of this paper a detailed description of the diagrams, which are fully explanatory in themselves. It will be noted that the main function of the *administration* division is to provide an environment in which the greatest possible number of men in the *production*<sup>1</sup> division have the very best opportunity to express their individual creative power in constructive work. And it is the main function of the *supply* division to provide a sufficient quantity of the most suitable materials in order that the highest type of organized creative power can be developed.

I am using these illustrations from actual industry to point out

<sup>1</sup> Broadly speaking of course, "production" covers all the activities of the organization. For the purpose of this analysis however it is used in its restricted sense as applying to the immediate conversion of raw materials into the finished product.

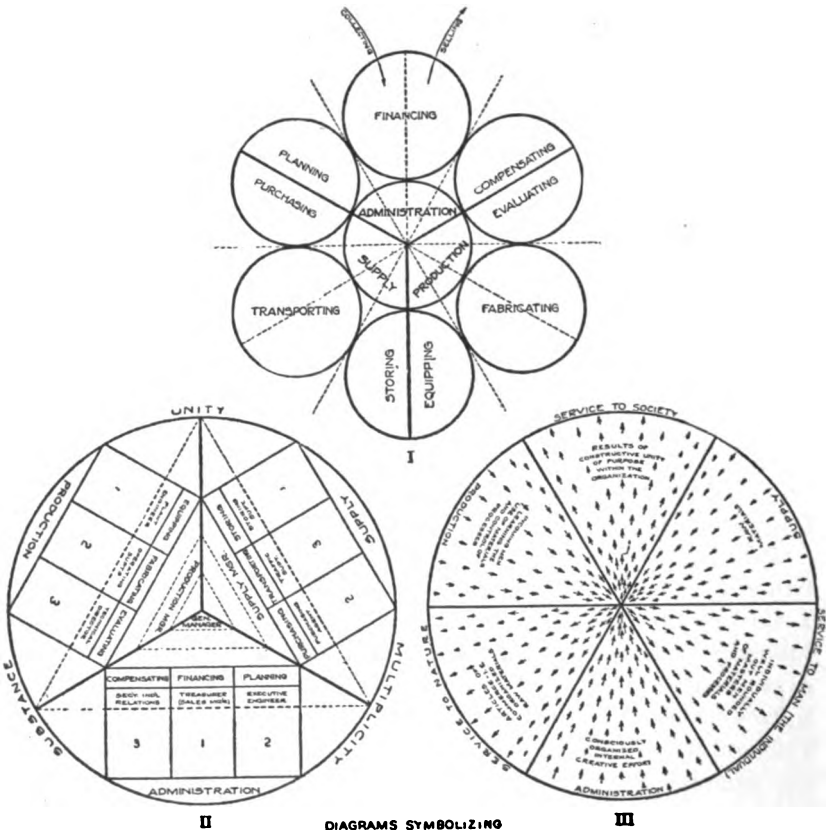
what seems to me is an obvious fact; namely, that as the unit of which the individual plant is composed is the man, and the unit of which the large corporation is composed is the individual plant or department, so, in the natural course of evolution, the corporations must unite into industrial associations, which reflect their particular kind of creative activity in society—society being represented in its organized aspect as government.

There is this fundamental difference between the industrial plant and government; namely, that, while the administrative division of the industrial plant organized material substances by consciously bringing together raw materials and men, the function of the administrative (executive) branch of the government is to organize humanity by consciously bringing men into contact with industrial organizations. The substance of which society is composed is man. Men, however, in order to express their particular kind of creativeness, naturally associate themselves into varied types of industries, so that the industrial aspect of our governmental organization should be represented by the legislative or planning function.

Believing that the principles underlying industrial organization can be applied to the organization of political and social structure, I am taking the liberty of comparing the functions of organized industry with what it seems to me can become the functions of organized society. In doing this I realize that I am trespassing upon economic ground, which, as an engineer and a manufacturer, I should perhaps know enough to keep off of. I feel, however, that the principles of individuality are universal, and if we are to organize society to permit the exercise of freedom, it must be done according to laws which are fundamental and capable of demonstration in the world of material things. When we get into the mental realms, we must, of course, resort to analogy in order to clarify our conceptions and make them practical.

The first set of diagrams illustrates the principles of industrial organization, and, as they are fully described on the cuts, it will be unnecessary to explain them further.

The second set of diagrams, which are also fully described, suggest a way of applying the same principles upon which the individuality of the industrial organization is built to the individuality of the government itself. The titles that have been applied to these various headings are, of course, merely suggestive, and have been chosen because they describe the kind of function which it



DIAGRAMS SYMBOLIZING INDUSTRIAL INDIVIDUALITY

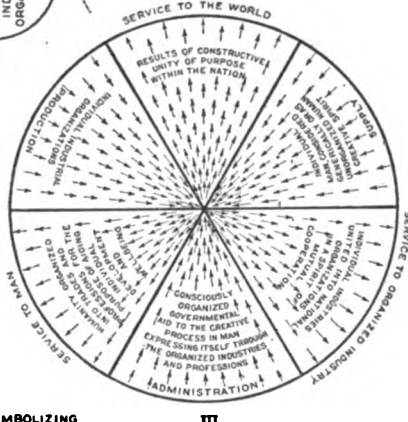
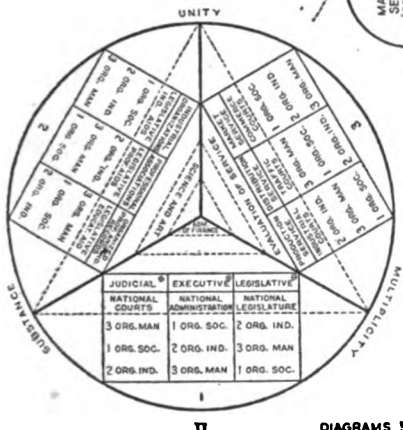
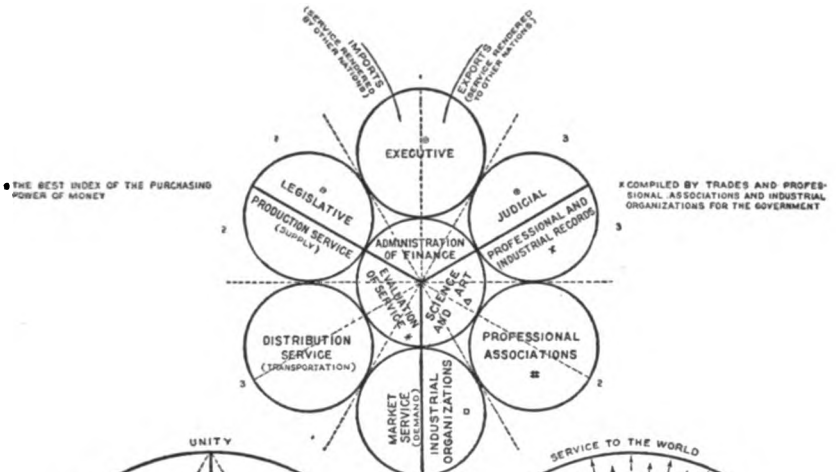
DIVISION	GENERAL FUNCTIONS			
(1) ADMINISTRATION 1	FINANCING	GENERAL ACCOUNTS	SALES	COLLECTIONS
" 2	PLANNING	BUDGETS	PLANS & ESTIMATES	WAYS & MEANS
" 3	COMPENSATING	EMPLOYMENT	SERVICE	COMPENSATION
(2) PRODUCTION 1	EQUIPPING	CONSTR. & MAINTENANCE OF BUILDINGS.	CONSTR. & MAINTENANCE OF EQUIPMENT.	CONSTR. & MAINTENANCE OF POWER PLANTS.
" 2	FABRICATING	PREPARATION OF RAW MATERIALS.	FABRICATION OF PREPARED MATERIALS.	FINISHING OF PRODUCT.
" 3	EVALUATING	PROGRESS RECORDS	RESEARCH AND INVESTIGATION	PLANNING FOR IMPROVED EQUIPMENT
(3) SUPPLY 1	STORING	CRUDE MATERIALS	SOMEY SUPPLIES	APPARATUS
" 2	PURCHASING	" "	" "	" "
" 3	TRANSPORTING	" "	" "	" "

(1) THESE HEADINGS NATURALLY CAN BE MODIFIED TO MEET LOCAL CONDITIONS AND DIFFERENT TYPES OF INDUSTRIES. THE PURPOSE IS TO ILLUSTRATE PRINCIPLES ONLY.

(2) IN A SMALL PLANT, FOR SAKE OF ECONOMY, SEVERAL POINTS ONE CAN BE COMBINED UNDER ONE AND

(3) IN THE CENTRAL BREAKDOWN OF A LARGE CORPORATION MADE UP OF A NUMBER OF PLANTS THE ACTIVITIES ARE LARGELY FUNCTIONAL. IN THE INDIVIDUAL PLANT THEY ARE ADMINISTRATIVE.





DIAGRAMS SYMBOLIZING NATIONAL INDIVIDUALITY

- **JUDICIAL** - FOR DETERMINATION OF JUST COMPENSATION FOR SERVICES THAT HAVE BEEN RENDERED.
  - **LEGISLATIVE** - FOR ESTIMATION OF FUTURE SERVICE RENDERING POWER OF EXISTING OR PROJECTED ASSOCIATED ENTERPRISE.
  - **EXECUTIVE** - FOR EXECUTION OF PROPER COMPENSATION FOR PAST SERVICES RENDERED, AND ALSO CREDIT EXTENSION (CAPITALIZATION) BASED UPON ESTIMATED FUTURE SERVICE CAPACITY.
  - **PROFESSIONAL ASSOCIATIONS** IS USED IN THE BROAD SENSE, TO INCLUDE TRADES UNIONS AS WELL AS PROFESSIONS. THEY ARE ORGANIZED HUMAN MOTIVES AND FORM THE CONNECTING LINK BETWEEN EDUCATION, (SCIENCE) AND THE INDUSTRIAL ARTS (APPLIED SCIENCES).
  - **INDUSTRIAL ORGANIZATIONS** ARE PRIMARILY FOR THE PURPOSE OF PROVIDING FACILITIES FOR THE INTELLIGENT PRACTICE OF THE SCIENCES, AND THEREFORE THE DEVELOPMENT OF MAN.
  - **SCIENCE** IS ORGANIZED FACTS, (PROFESSIONAL AND INDUSTRIAL RECORDS) AND AN ART THE PRACTICE OF A SCIENCE.
- NOTE: ON EACH SUBDIVISION (DIAGRAM II) SHOULD BE "REPRESENTATIVES OF" ORG. SOC., - ORG. IND., - ORG. MAN.

seems to me should be performed by the three main divisions of government.

It will be noted that under each of these headings I have suggested that representatives of the three aspects of society be included. *Man*, of course, represents the substance of which society is composed; *industry* (used in its larger sense) symbolizes the organization of men under a multiplicity of different aspects of creative activity, and *government* represents the organization of society to produce unity of action within the nation.

While all three of these aspects of society are included in each of the headings, the dominant note in each subdivision is indicated by the one which appears at the top. As an aid to show the relationships, I have numbered society 1, industry 2, and man 3.

Is it not true that before we can fully secure the initiative of the workman—I use the word “workman” in its larger sense to include all of humanity—we must conceive of the judicial function of the government as primarily adjudging merit instead of demerit? I believe its main function should be the determination of just reward for services rendered, for if men were working in an environment which gave full opportunity for individual self-expression, there would be very little destructiveness to punish.

In order that the courts can function in this way, however, the legislative bodies must change their repressive character by making laws for aiding industrial development rather than laws which hinder. When the industries cease exploiting humanity and recognize that the basic reason for their existence is to provide the best possible environment for the development of mankind, then it will be safe to make the organization of industry legitimate.

Of course, this would not have been a safe thing to do until humanity had been organized into the trades and professions. What has occurred in Germany is proof of this, for in that unfortunate country autocracy captured industry and dominated it before man himself had learned to organize for his own protection. There is no reason for believing that the results would have been otherwise in this country if the Sherman anti-trust law had not prevented the industrial combinations from forming first. May I suggest that this is perhaps the reason for this law, which has now become inoperative by the action of the government itself when it became necessary to marshal the creative forces of the nation in the great war emergency? To marshal these forces the government authorities did two things:

1. They called upon the practical men, the representatives of the workmen, the engineers and scientists to tell them *what* to do and *how* to do it. They asked those men to build up organizations to direct the industrial operations of the country. Gradually this group of men, whose training had made them masters of the material forces, began to accumulate information which enabled them to know what the nation's resources actually were. They encouraged the producers to organize into associations to aid them in making a complete survey of the field of resources and requirements, and in this way were able to determine which organizations had the greatest capacity to render service. The legislative branch of the government was acting under the direction of these bureaus of industrial leaders for the simple reason that it could not act intelligently without them.

How can we expect to get intelligent legislation in peace times without this same coöperation between nationally organized industry and the national legislative body?

2. The second thing the government did was to administer the finances of the country in such a way that credit was extended to those who were estimated to have the greatest capacity to render service. Without this executive power to administer credit where needed, little could be accomplished for it had to be administered for the good of the whole country. Why then isn't this a necessary peace-time executive function also?

With the government administration of credit for the benefit of society, the interest charges would naturally be made as light as possible in order to reduce the burden, and thereby stimulate creative enterprise.

With legislative coöperation to aid organized industry, and judicial assistance to determine just compensation for services that have been rendered by individuals, the executive branch of the government could administer credit for the benefit of all. Credit capital did not exist until we had associated enterprise, and its function is to form a medium through which society can measure its indebtedness to the individual for services rendered. It is one of the most subtle forces we have at our command for it transmits mental impulses and therefore measures mental relationships primarily. While we refer it to gold in order to give it a material basing, as it were, nevertheless it is so fluidistic and reflective of human creative spirit that it can only be expressed in symbols such, for instance, as an entry in ledger or an engraved certificate of indebtedness.

I wish to state right here that I am not in favor of governmental domination by any particular political party. My personal feeling is that what has been advocated by a certain type of political socialism will not, in any way, lead us out of our difficulties. I am an individualist, and believe in the fullest possible opportunity for individual self-expression, but I feel absolutely certain that, as the individuality of the industrial organization must be developed in order to give full opportunity for the development of the individual workman, so must the individuality of the nation be developed if we are to give full opportunity for the development of the individual industrial organizations and the individuals of which those industrial organizations are composed.

The law is always the same; namely, that any individual center of consciousness expressing life, in order to express life in its fullness, must be organized so that it is conscious of its *inner* organic unity and of its *outer* environment; that is, what is going on within the organism itself and of the external effect of its actions.

The three aspects of individuality, as indicated by the diagrams, consist of, first, *substance*, then substance organized under a *multiplicity* of individualized activities, which perform the special functions to enable the whole to become finally a conscious *unity* for expressing itself in constructive service for advancing the welfare of the world.

Surely an association of nations based upon this conception of rendering service need not think of a type of internationalism which does away with national characteristics. Those groups which logically and naturally should work together must form themselves into individual societies or governments; otherwise, the progress of the human race will not be individual but generic. The individuality of the nation must be just as carefully and conscientiously developed as the individuality of the plant in the larger corporations, or, as the individuality of the department within the plant or the man within a department. When each nation realizes that its growth in creative power depends upon its coöperation with other nations for the welfare of the whole world, the attitude of exploitation which has dominated national life in the past will disappear, for it will be soon that the greater the service rendered by the nations, the greater the reward, and that no true growth can come to any individual organism that does not recognize this principle, whether the organism be a man, an industry, a state, or a nation.

In concluding this paper, I wish to state that I am offering these suggestions for developing national consciousness, fully realizing that the solution is a problem of gradual evolution and can only be solved successfully when many minds are at work upon it, each completing and correcting one another. It is the world-old question of the relationship of the individual life to the universal life, which, to my mind, will not be solved until we understand the principles underlying individuality, that is, how the greater life can include the lesser without hindering, but aiding its development.

The problem is not impossible of solution, however, for man is the product of the whole evolutionary movement and therefore must contain the essence of it within himself. He is destined to become conscious of his own part in the great plan of cosmic evolution; for it is only as he *consciously* reflects the universal life that he can understand its meaning.

A vitalized form of organization and order must therefore take the place of the present unorganized state of society if man is to develop to the full his latent creative powers.

NOTE.—Other articles by Mr. Wolf, describing the details of his organization may be found as follows:

“Making Men Like Their Jobs,” *System*, Jan. and Feb., 1919.

“Non-Financial Incentives,” Amer. Society of Mechanical Engineers, N. Y. City.

“The Creative Workman,” Technical Ass’n of the Pulp and Paper Industry, 131 East 23d St., New York City.

“Individuality in Industry,” “Discussion on Beating Paper Stock,” and “Control and Consent,” in Bulletins of the “Taylor Society,” Aug., 1915, Oct., 1916, and Mar., 1917, “Boxleigh,” Chestnut Hill, Pa.