

# BIBLIOGRAPHY OF PHARMACEUTICAL RESEARCH

Compiled by A. G. DuMez, Reporter on the Progress of Pharmacy.

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## BUSINESS RESEARCH.\*

An impressive fact that characterizes modern industrial invention is that it is the product of scientific research largely conducted by the related industries themselves.

In our own country the federal government, largely because of the pioneer work of the Bureau of Standards, is converting abstract scientific knowledge into applied industrial science with the coöperation of industry and in its behalf. Many of the services of the Bureau of Standards are for practical ends obvious even to the laymen. Thus they have worked with the Hotel Association in developing

\* Parts of a press abstract of speech delivered at New York, May 26, before the Trade Association Executives, by Henry Bruere, *Third Vice-President* of the Metropolitan Life Insurance Company.

formula for unbreakable china that not too blatantly proclaims its virtue in this regard, and with laundrymen in devising fabrics that do not succumb to cleaning.

There is an impressive amount of technical industrial research. Less is being done in the important field of commercial research. Here again the federal government is taking a leading part, under the guidance of Secretary Hoover in the Department of Commerce. The simplification and standardization work accomplished by the Department in cooperation with trade associations is a first class contribution to sound business economics. There are, however, great undiscovered worlds of knowledge in the domain of management. It is not a serious strain on truth to say that there is more common knowledge regarding astronomical facts than there is regarding the methods and principles of business management.

Knowledge of the science of business, to continue the comparison with astronomy, is still in the astrological stage. We know that the velocity of light is 186,000 miles a second, an eight minutes' journey from here to the sun, and we know or we are authoritatively told that for the same ray of light to reach the nearest star would take four and one-half years. But with respect to the every-day processes of business management most of us are unaware and we can only learn by costly experiment. We have not formulated the knowledge that has been accumulated generation after generation and dies with those who possess it. We have not taken it out of our heads. The successful business man regards himself as an elastic versatile creature, able to meet all the varying conditions that confront his business, but if you ask him how he does it, he will answer merely that he exercises good judgment or confronts you with platitudes. As a matter of fact he is proceeding along rather clearly defined lines, so much so that "knowing the business" is a first requirement of any business man's formula for success.

It is a recent conception that business may cooperate to public advantage. The Sherman Law rests on the age-long suspicion of combinations since they were historically the means of strangling the consumer.

One of the most significant marks of commercial progress in recent times is the development of the conception of cooperation among members of a trade for the good of the community. In other words, we are beginning to see that our national trade and industrial equipment is a resource for the common good and that that good can best be served by accumulating knowledge regarding methods of performing the service to which trade and industry are dedicated. The trade association is performing an admirable function in this regard.

As soon as we definitely convince ourselves that business is a form of public service and that the community is as much entitled to the results of experience and investigation in the field of business administration as it is in the realms of science, we shall have a new public regard for business activity and a notable strengthening in the business structure now too subject to the devastations of ignorance of progress in what is less an art than a science.

Because business has been nearer our appetites than our sentiment, it has been slower to perceive the obligations that rested upon it, to achieve for itself the degree of freedom to progress the rough exchange of methods and experience which can only come when the public has been persuaded that cooperation between business men will result to the advantage of the public and employees, as well as to stockholders or individual owners.

## THE ETHICS OF ADVERTISING.\*

The notion that advertising in its broad sense is an economic waste has been long since abandoned. I have already mentioned its social use in advancing standards of living and its economic influence upon mass production and thus its contribution to lowered costs. More directly it is an economical form of distribution. The steady increase in volume of advertising in our news and periodical press is only one proof that it is such an economical form of distribution, for if it did not secure greater results at less expense it would decrease, not increase. The consumer, searching for article or service, turns to the advertising columns of our press to learn just where to go after it, and so avoids the waste motion and loss of time and strength involved in blind search for fulfillment of his desire. All these things eliminate waste motion and time.

But there are some economic wastes which can be eliminated by the advertising managers. One of these you are already attacking through your development of research activities. An advertising agency is a selling agency. The indispensable attribute of salesmanship is an understanding of the market. Competent salesmanship requires that its efforts be expended in territory and by methods which shall reach the maximum number of buyers at the minimum cost. It follows logically that sound market analysis must be an integral part of advertising salesmanship. All this requires hard, intensive, not superficial analysis. Research in these matters is like that in any other branch of economics. It takes time to develop experience and method. You have already gone a long way in this direction.

There is another economic waste through advertising which has given your organization great concern and is of the most profound concern to the public. I do not refer to the field of fraudulent representation, for that is simply porch climbing. What I do refer to is the advertising of articles which do not really contribute either to usefulness, comfort, or even luxury.

To attain a permanence in public confidence, to maintain a position as part of the economic machinery of the country, the advertising executive and the medium need to see to it that the desire they create is satisfied by the article they present. To establish the good will of the public toward producer of goods and service is not alone a necessity to success in advertising, it is also a necessity to the advertising executive and the advertising medium if advertising is to maintain its influence.

Great advancement has been made, so great in fact that while advertising at one time may have been looked upon as a nuisance and an intrusion for the beguiling of the credulous only, it has now come to take a place as commercial news and as an economical method of salesmanship. Its first step in progress was when the medium, recognizing its responsibility to the readers, exercised censorship over extravagant, distasteful, and misleading copy. This gave more credibility to truthful advertisements themselves. The next great step was your organized action of advertising managers, advertisers and advertising mediums through moral suasion, Vigilance Committees and Better Business Bureaus.

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\* Part of the address of welcome by Secretary Hoover before the twenty-first Annual Convention of the Associated Advertising Clubs of the World at Houston, Texas, May 11, 1925.

It is not too much to say that from all the many inventions and the multitude of ideas that are poured forth daily in the preparation of advertising there is emerging a science and a profession. It is becoming a science in its search for method and a profession in its skill of management. I am told there are seven thousand students in our business educational institutions preparing for advertising as a career.

But the milestone which will mark the passage from a trade to a profession is the establishment of group ethics. It is upon this subject that I wish to lay some emphasis. The group characteristic of law and medicine and engineering is not alone the training of skill required, it is the elevated code of relations with fellowmen, the incorporation of responsibility to the community into the daily task, the insistence upon a high sense of service given, that marks their distinction. The use of the slogan "truth in advertising" and the vigilance agencies which you have set up to protect the consumer are themselves the finest of proof that this business is evolving toward highly ethical standards.

Advertising unfortunately still has to contend with some residue of unethical practices and with accumulated prejudices which arise from the methods of many years ago. But in the organizations which you have set up, the principles which you have advocated, the practical steps which you have undertaken, we are seeing a new day in the ethics of advertising itself. And just so far as those ethical principles are embodied in practice, just that far will the public grow in confidence in advertising and just that far have you progressed into a profession.

Now all this description and comment upon the work of your profession raises for me another picture in which we can take great pride. Through the discussion and advocacy of standards of conduct and ethics your organization and your sessions are taking part in the upbuilding of a new and growing sense of responsibility and self-government in our economic life and in the community at large.

Self-government comprises more than political institutions. It is more than municipal governments and state governments, legislatures and commissions. No doubt real self-government starts in every individual, that he control his own moral and intellectual contacts with his fellowmen in common interest. But beyond this the growing complexity of our modern life requires that if self-government is to be a success there must be self-government among groups. There are many problems of restraint of abuse that can be solved by agreement among groups instead of by law. Our numbers have become so great that we elbow each other in all directions. When we had only seven people in a county instead of seven millions we did not step on others' rights so much—nor did we have such a field for advertising.

We are confronted with the daily demand to extend government in order to cure some abuse or other. The arm of government is a poor cure for abuse, for it becomes at once a restraint of liberty. For the arm of government cannot operate even to restrain evil without bringing about some instance of oppression. The safeguard against the invasion of government into the lives and liberties of our people is that we shall cure abuse outside the government. Such associations as yours, in the erection of ideals of a profession, in the determination of methods and definitions of standards for the elimination of abuse, is self-government, and it is

self-government in the greatest form of which democracy has yet given conception—that is self-government outside of government.

The war drove us to great centralization of government and to great dependence upon the action of central government. The continuance of this mobilization of all effort would have destroyed the initiative of our people and destroyed the very impulses to progress. But from it came the illusion that most human ills could be cured by governmental regulation. It has been hard to get back because everybody knows of some ill in the other fellow's business that ought to be cured right away. We need to have the public mind turned off of the national government as the remedy for all ills. We need to get Washington off of the front page at least part of the time. If we can decentralize thought onto state and municipal government, and above all to such efforts as yours to cure abuses from within, we shall automatically stop the growth of federal encroachment.

National character cannot be built by law. It is the sum of the moral fiber of its individuals. When evils which rise from our growing system are cured by live individual conscience, by initiative in the creation of voluntary standards, then is the growth of moral perception fertilized in every individual character.

The test of our whole economic and social system is its capacity to cure its own abuses. New wrongs and new relationships to the public interest will occur as long as we continue in scientific discovery and as long as we continue to progress. If we are to be wholly dependent upon Government to cure these abuses we shall by this very method have created an enlarged and deadening abuse through the extension of bureaucracy and the clumsy and incapable handling of delicate moral and economic forces.

American business needs a lifting purpose greater than the struggle of materialism. Nor can it lie in some evanescent, emotional, dramatic crusade. It lies in the higher pitch of economic life, in a finer regard for the rights of others, a stronger devotion to obligations of citizenship that will assure an improved leadership in every community and in the nation. It lies in the organization of the forces of our economic life so that we may strengthen the home and may produce happier individual life, more secure in employment and comfort, wider in the possibilities of enjoyment of nature, larger in its opportunities of intellectual life. The ferment of organization for more definite accomplishment of these things in the practical day-to-day progress of business is alive in our business world.

The Government can best contribute through stimulation of coöperation with voluntary forces in our national life; for we thus preserve the foundations upon which we have progressed so far—the initiative of our people. With vision and devotion these voluntary forces can accomplish more for America than any spread of the hand of Government. Your association is contributing to these ends.

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#### COÖPERATION AMONG SCIENTIFIC MEN.\*

I. Science is a benefactor of humanity, but, unfortunately, so far, the world does not "stir itself to make it possible for its benefactors to live and work." This makes necessary organized voluntary coöperation among intellectual workers.

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\* Parts of a paper by Dr. Walter P. Taylor, United States Department of Agriculture, in *Scientific Monthly*, April, 1925. Permission granted to reprint.



Science has done much to better the lot of mankind. It has helped to eliminate disease, superstition and ignorance. Its beneficent services underlie and maintain the complicated structure of modern civilized society. It has remained for science, through innumerable contributions to production, transportation and communication, to make of the world a unit, such that democracy and world brotherhood, formerly the dreams of far-sighted men of prophetic insight, have for the first time in history become actual possibilities. Scientific men and intellectual workers generally, to whom these advances are due, should be recognized as among the most valued servants of society, and, as a matter of course, provided with the economic essentials to good work. Unfortunately, however, the public has no clear appreciation of the fundamentally important rôle played by the intellectual worker, and, as a consequence, makes very little effort properly to support his work.

(1) The intellectual worker should realize that he, himself, as well as the public, has a definite responsibility for the conditions under which he works. \* \* \*

(2) One essential to effective coöperation among scientific men is the definite abandonment of ultra-individualism, and its replacement by group loyalty, sympathy and mutual helpfulness.

The work of the scientist has always been on a lofty ethical basis, though founded almost altogether on an individualistic philosophy. The ethics of coöperation are higher and considerably more difficult of successful attainment than the ethics of individualism, but they promise far more for the future.

Close attention to one's specialty with little thought of the other fellow is the line of least resistance for the intellectual worker. Ultra-individualism, like ultranationalism, once the "flame upon the altar," is now likely to be "a devastating scourge."

On the other hand, compulsory coöperation, effected through a disciplinary organization of scientific work and workers such as Elihu Root appeared to have in mind a few years ago in connection with the organization of the National Research Council, could not possibly be effective or successful in the long run. Such pseudo-coöperation would, in my opinion, work greater havoc than a rampant individualism. In order to be helpful, coöperation must come from within the ranks, and must be a very liberal affair, allowing for the widest differences of opinion and interpretation, and acting rather as a stimulus than as a damper on individual initiative.

In commenting on certain policies of farmers' coöperatives, a writer in Wallace's *Farmer* (February 8, 1924) calls attention to the necessity for remembering that these practices are means rather than ends. "The end we are striving for," he says, "and that coöperative organization seems most likely to bring about, is the creation of a rural civilization that will offer the greatest opportunities for the freest development of the human spirit." Similarly, what intellectual workers are striving for, and what voluntary organized coöperation seems most likely to bring about, is the creation of an educational atmosphere that will offer the greatest opportunities for the freest development of the human spirit.

When I refer to group loyalty, I do not necessarily limit the concept to one particular group; but it ought to be realized that the pervasiveness and purity of group loyalty, sympathy and mutual aid among intellectual workers may be taken

as an earnest of the possibility of their expanding these great conceptions to embrace all humanity.

(3) Definite organization for the economic as well as the scientific advancement of intellectual workers will naturally follow the development among them of the coöperative spirit. \* \* \*

II. Organized coöperation will make science more efficient.

(1) Experience in the worlds of business, labor and agriculture demonstrates the economic advantages of organized coöperation.

There are few who would deny that organizations of business men, manual workers and farmers have been economically advantageous to the groups represented. It is increasingly evident, also, that proper organization affords a medium for the maintenance of higher standards of service to society on the part of these groups, respectively. \* \* \*

Science having made democracy something more than a dream of the prophets, scientific men and intellectual workers have a prime responsibility to help make it workable and effective. The results of science must be taken to the people and the distribution of these results must be put on a fair basis. All science, both pure and applied, should be for use by mankind. As J. C. Merriam once wrote (*Science*, November 19, 1920, p. 476), "Research should lead to construction and is not complete unless the results are available for general use." In theory most of us agree with this principle, but in practice we fall short of realizing it. Over-absorption in a specialty is not only one of the principal reasons why the individual scientist is exploited on every hand, but it also lessens his contacts with public problems for the proper solution of which his work is essential. As Branner has well said (*Science*, May 4, 1917, p. 418), "Our presidents, governors, judges, mayors and others in public life need the services of men of science." Geddes (*California Alumni Monthly*, 1922) has called attention to the fact that while every country has had a great number of lawyers in its government, one must seek far to find the country in which the best medical minds, the best engineering minds, the best scientific minds, are taking part in the national government, directly as responsible legislators and cabinet officers. The matter of health, he says, is purely a question of good government. The same may almost be said of questions of economic adequacy and of such problems as war, poverty and crime. "We will never," says Geddes, "get really satisfactory governing bodies until we have got the best thought in each of the great scientific lines of thought represented effectively in them. We must arouse the scientific and well-instructed men out of their absorption in teaching, in the work of a profession, and interest them in government." These remarks of Geddes imply a very lofty and difficult conception of the duty of the intellectual worker, and demand from him a willingness to coöperate with the community which I fear few of us possess at present. It is perfectly certain, however, that in addition to our very proper present-day ideals of whole-hearted devotion to our specialties we must assume a new ideal of professional and community coöperation. I suspect our hardest task will be, not in awakening the public to the need for more liberal support of scientific work, but in educating ourselves to work and strive together, to be coöperators instead of competitors.

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