SCIENCE

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SCIENCE IN THE PUBLIC PRESS[1]

By SIR RICHARD GREGORY, Bart., F.R.S.

EDITOR OF NATURE

THREE separate factors—science, the public and the press—are involved in the consideration of the subject of this address. Whatever science has to say, and whatever facilities are afforded by the press for saying it, the decision whether to read or pass over what is offered rests with the public. Knowing that its verdict is final, the policy in most newspaper offices is to publish matter which will be acceptable to as large a section of the community as possible. From a business point of view, this is the only sound principle to be followed, especially as the advertising revenue is largely determined by the number of the net sales. Among the readers of all newspapers, however, are many types of mind and a variety of interests; and a wise editor endeavors to appeal to most of them. He can secure distinction for his journal by being ahead of some of his readers in the attention given to particular subjects, but he must not be too much ahead in most of the subjects for most of his readers if the journal is to survive and its circulation be maintained or increased. This is true of all periodicals, and should be borne in mind in discussions of the relations of science to the press or of the press to science.

The function of a daily or weekly newspaper is to provide reading and readable matter for a general or particular public—the main part being intended for all who care to read and the special columns for those whose interests are in particular fields of thought, work or sport. Usually the matter is presented in the form of (1) news items dealing with occurrences or opinions factually treated; (2) articles of a more extended character, or essays, dealing with their subjects in a less summary fashion and more informative

[1] Presidential address delivered on September 21, 1934, at the eleventh annual conference of the Association of Special Libraries and Information Bureaux, at Oxford.

than is necessary or possible in the news items; and (3) leading articles written or inspired by or through the editor and ostensibly setting out the considered view of the journal and the interests it represents.

It is scarcely too much to say that most of the matter published in newspapers is regarded as being of an ephemeral character, though a more correct view would be to regard the attention given to it by its readers as ephemeral. The durability and value of an item of information or news given in a newspaper depends entirely upon the previous knowledge, the interests and the occupation of the person by whom it is read. The discovery of a new comet or of a new constituent in atomic structure may be of vital concern to astronomer or physicist, but of passing interest only to the man in the street. The discovery of a new process in manufacture, which may affect permanently the lives of thousands, may pass under his eye almost unheeded.

The object which a newspaper has in view primarily is to get sold and read. This is no mere cheap cynicism. The whole format of a newspaper—size, quality of paper, type, arrangement, illustration and make-up generally—are directed to this end. It must attract readers by its general appearance in the first instance. This is imperative, for a paper that does not attract constantly is a paper without influence or with very little. But it must add to this attraction of form the appeal of the interest in its news. It is in this sense that it is true that the newspaper, especially the cheaper and lighter press, in its attempt to gauge what class of matter will hold its readers and increase their number may be said to follow and not to lead the opinion of its public. Hence also, with certain qualifications, the attention which the press can afford to give to science depends upon the public interest and demand for news about it. Newspaper editors and their staffs aim at supplying these needs; it is they who have to be convinced that a large section of the public has a genuine interest in scientific subjects, and that this interest is sufficiently strong to justify giving a fair amount of attention to developments in science. Science news may be of high importance and wide interest without being a "scoop" or a "sensation"; and editors should realize that the romance of modern scientific achievement need not involve a sacrifice of truth.

If it is to be admitted that science, and more especially scientific progress and discovery, are of interest to the public, tradition helps to define the attitude which will be taken by the press. Science is "news"; it is matter fitted from time to time, as occasion arises and its interest becomes topical, for extended treatment by informed writers and specialists in special articles; and it is matter for editorial comment, more especially when it impinges upon public concern in connection with the health and well-being of the community or in its application to legislation, administration or commerce and industry.

It is, however, difficult to estimate the extent to which the public as a whole, reading the daily and weekly newspapers, expect to be informed in its own language of important developments in, for example, such intricate matters as atomic constitution, quantum theory, relativity or the significance of chromosomes. The attention given to such subjects in the public press depends, of course, largely upon the type of journal; and what may be published appropriately in *The Times* would be out of place in the less substantial daily papers. Most editors know their business and publish what experience has taught them their readers like: when they do otherwise, the circulations of their journals suffer.

It ought not to be too much to expect that every daily or weekly newspaper of importance should have upon its editorial or reporting staff some one capable of dealing intelligently with scientific subjects in the same way that special attention is given to other activities. Our complaint is that, with very few exceptions, little attempt is made in the public press to secure adequate or accurate treatment of scientific news. In the whole kingdom there are apparently not a dozen daily papers which have on the editorial or reporting staffs a single member with a science degree, or even with sufficient elementary knowledge to pass a school certificate examination in general or everyday science. While these conditions exist, the public will lack in science the enlightened guidance which they receive in other matters.

In the newspaper world it is recognized that information and guidance in financial matters should be entrusted to financial experts. The services of similar special critics of art, music and drama are used in the production of the chief daily and weekly newspapers; and sport is now so highly specialized that separate contributors are appointed to deal with racing, golf, cricket, football, tennis and other branches of it. No editor of a leading newspaper would think of entrusting his columns devoted to any of these activities to a reporter or other contributor unfamiliar with the principles of the subject or the elementary rules of the game. This, however, is what is usually done when reports are required of scientific meetings, or a scientific man is interviewed upon the significance of a particular discovery. It is most rare for a reporter or interviewer sent to deal with a scientific matter to know even the alphabet of the subject. The result is usually that trivial points are given undue attention while the main matters are misrepresented or expounded with irritating confusion.

Art and letters, music and religion, have their interpreters in the periodical press and can not com-

plain of any lack of attention to their works or teaching. In its human interests, science can make just as wide an appeal as any of these, but there are few who can review scientific matters with the independent and critical mind which estimates the value of opinions or performances in other spheres. A bare announcement of a scientific discovery may be worth publication as an item of news, but not much more so than a report that an important creative work has been completed by an eminent artist or man of letters. Supplementary to such news, reasons must be given why the discovery or work is of particular significance; which means that its characteristics must be clearly described by a competent writer. While it is easy enough to secure contributors able to express opinions, with more or less authority, upon works in literary fields, no scientific contributor could presume to deal similarly with original work in the realm of nature unless he possessed first-hand knowledge of the particular subject.

There are a fair number of writers who can make abstracts or digests of scientific papers, or even provide a statement of the main points intelligible to readers without very special knowledge, but something more than condensations of this kind is needed before science news will find a regular place in the public press. Most people have yet to learn how and why science and scientific thought are the determining factors in the chief problems of progressive life, and the bare record of new results can do little to enlighten them. To be a successful expositor of science, it is necessary to be suggestive as well as accurate, to show human contacts with the facts described, and enable the reader to appreciate the wide interest of the particular subject presented. In recent years, much attention has been given to the cultivation of appreciation of art, music and literature; with the result that rich fields of study and delight have been opened to many people formerly unfamiliar with them. Something of the same spirit and intention is required of interpreters of science if its work and development are to be followed with enlightened pleasure. No discovery could be described in isolation, but in relation to its scientific background.

It must be acknowledged that the attitude of the individual scientific worker—and here allusion is made more particularly to the scientific worker who is engaged in research—is by no means universally well disposed towards newspaper publicity. Quite apart from the danger, which after all is perhaps not really very great, of premature disclosure of results either before they have been thoroughly tested and digested, or before it has been possible to secure them against illegitimate exploitation, the scientific worker often has reason to accuse the popular press of superficial treatment which is misleading, or of giving to the world a garbled version of the material passed to it, which is no less harmful to the interests of scientific advancement. As regards the correctness of the information published, though it is true that the special equipment of those who collect scientific news usually leaves much to be desired, it should be remembered that each individual has to cover a wide range of subjects. When the very technical character of the material which is embodied in the press matter sent out from congresses, scientific meetings and laboratories is considered, it is perhaps remarkable that the reporter achieves such success as he does.

Whatever may be the attitude of the individual man of science towards publicity, it is obvious that his objection is not universal, but is directed towards publicity of a particular kind. For publication of his results is normally an essential of his work. Not only must his own results be published and made accessible —not primarily that credit may accrue to him, though that is not without its importance—but in order that his methods and results may be probed and tested by his fellow workers before they can be added to the accepted mass of facts and theories which we call "science" as a whole. Further, his work when thus made accessible to his fellow workers serves as a stepping-off place for further advance. In the same way he himself makes use of the published results of others.

To meet these needs of the research worker, and also of the man of science who, while himself not actually engaged in research, may for professional reasons have to keep himself abreast of progress, an elaborate machinery has been built up. For verbal discussion there are learned and scientific societies and congresses, the latter usually international in character, attracting members from all quarters of the globe. Then in the matter of publication each of these organizations, as a rule, publishes a report of proceedings, and although these are intended primarily to record only their respective proceedings and meetings, most of them throw open their pages for other contributions not all necessarily written by their own members. Further, there are independent scientific publications devoted entirely to scientific subjects, and a host of technical periodicals dealing with the application of science to practical affairs in various aspects. Hence the scientific worker may be said, generally, to be very fully provided with opportunities for the publicity which is essential for the record and discussion of his work; though from this point of view the public press is of no assistance to him.

On the other hand, the publications which are essential to the scientific worker are of no advantage to an interested public which is without technical knowledge, and often technical knowledge of an advanced character. Not only is the language abstruse—that is a

minor difficulty—but the argument is allusive and proceeds on the assumption of a background of knowledge of fact and theory which are the property of the expert only. Before this can become intelligible to the uninstructed it must be translated, expanded and expounded.

All this material is "news"—"news" which the press is anxious to have when once its bearing is understood, and "news" which appeals readily to the public when placed before them in a form which can be absorbed. Yet very few scientific men have the time or inclination, and indeed not many have the ability, to transform scientific material into such a form as will be understood and appreciated by the plain man. This is a misfortune in more ways than one. Consider, for example, the study of archeology. One of the most remarkable features in scientific journalism of the last ten or fifteen years has been the extraordinary interest which has been taken by the newspaper public in the progress of research into man's past. Anything dealing with the descent of man, prehistoric man in any part of the world, the archeology of Egypt, Mesopotamia or America or elsewhere has been followed with the closest attention. Articles by experts have been and are still welcomed in the columns of the daily press on almost any aspect of the subject. The reason is not far to seek. The technique of archeological research, elaborate as it now is, consists of processes which are familiar to every one; and the language in which the progress of excavation is described and the results expounded is the language of the every-day life of the average educated man.

Most scientific workers, however, have no desire to discourse to the laity and no capacity for transforming the special vocabularies of their subjects into the simpler—and not necessarily sensational—forms required by many general readers. It ought, therefore, to be gratefully recognized that the lay writer who is sufficiently well informed to present a scientific subject in attractive literary style, and accurately as well, is performing a very useful purpose for science. The investigator who can do this for advances to which he has himself contributed, and on which he can express himself with authority, can always find a genuine welcome in the lecture hall or in the periodical press. Only rarely, however, are the faculties of research and exposition so closely combined; and it is almost too much to expect them to be. After all, the first business of the scientific investigator is to discover—to add to the sum of natural knowledge—and if he describes his work clearly and in terms which are intelligible to his fellow workers he has done his part.

A scientific investigator is usually too much engrossed in his special subject to pay much attention to style or method in the presentation of his results. His vocabulary is that of other workers in the same field; and if he makes his work clear to them, he is satisfied. In a contribution to a scientific society the use of technical terms and symbols can, therefore, be justified. If, for example, an author is dealing with a highly-specialized development in mathematical physics, he has a right to assume that his audience or his readers are familiar with the language he uses. He can only be blamed if he fails to make himself intelligible through confused thinking or want of care in arranging his ideas in logical sequence or expressing them concisely. Language can not be rightly called "jargon" when it is the usual means of communication between workers in a recognized department of science, but only when it is confused or unintelligible. Every profession has its special terms and phraseology; and scientific investigators have just as much right or reason to address one another in what may seem slang as have stockbrokers, bookmakers or even lawyers. From the literary point of view, such barbarisms may be abominable, but within their particular field they are expressive and concise, and therefore appropriately fulfil the function of language.

It is unfortunate that the pursuit of science is commonly regarded by representatives of the periodical press as a mysterious occupation, and experiments as magic comparable with conjuring tricks. The fault probably lies in our schools and universities, from which it is still possible, and usual, for students to pass out with distinction into the world without any acquaintance with what science has done, and is doing, to shape human destiny. It is still assumed that a man may have pretensions to culture and yet know nothing of the natural world around him. Science may have been a sealed book to him throughout his educational career, yet in whatever field of activity he is afterwards engaged he will frequently be faced with problems requiring scientific knowledge for their solution, and should, therefore, understand when and how to seek scientific guidance. We should be sorry to suggest that specialized instruction in science should be forced upon every student in school or university—though that would only be following the classical tradition—but we do urge that no one today can justly claim to have had a liberal education without having been introduced to the methods of scientific inquiry, the development of scientific principles and the social and economic consequences of scientific discovery.

Whatever the ideals of a people, it is doomed to stagnation unless its science is living and is continually informing every activity of national life. It can scarcely be said that, in the educational training of our citizens, recognition of this factor of progress is

given to a degree at all commensurate with the national need, or that the responsible press of the country is doing anything to make the public understand the position which science occupies in the fabric of civilization. Knowing nothing of science, and with the distrust of the expert which is our national characteristic, editors and sub-editors of popular daily papers are unable to distinguish between the assertions of pseudo-scientific charlatans and the conclusions reached by scientific investigators as the result of careful inquiry. A sensational announcement is therefore preferred to a sober and accurate account of a scientific advance; and blunders are given harmful circulation which would be thought amazing if perpetrated in a like fashion in the domains of literature or art or history. Such lack of knowledge of scientific facts and principles might be excused in the multitude, but something more should be possessed by those who have had the advantage of higher education, and ought, therefore, to be impressed by the activity upon the quays where rich argosies of scientific exploration are continually being unloaded.

It is desirable also to cultivate in the mind of the public an understanding of the purposes for which men devote their lives to scientific experiment and inquiry. The aim of the pursuit of pure science is the discovery of natural truths, and this is just as laudable a desire as the search for beauty; for, as Keats told us:

> Beauty is truth, truth beauty; that is all
> Ye know on earth, and all ye need to know.

Too little attention is given to this aspect of the quest for knowledge and too much to the actual results achieved, which often represent the least interesting part of the story of why the quest was undertaken and how the goal was reached. The human interest in exploration in any field lies in the log book of the journey, the difficulties met, and how they were overcome, until the object of the expedition is attained. The public may not be able to understand clearly why a scientific inquiry is undertaken, any more than it understands why attempts should be made to reach the summit of Mount Everest, or why for generations explorers should have competed with one another in the race to the north and south poles. Human aspiration and the spirit of conquests are the main motive power of all such endeavors, and not the practical advantages which may accrue from the results achieved. So should the objects of research in the realm of pure science be regarded, and from this point of view should the thoughts and experiences of the adventure be described.

The acceptance of this principle means that the best narrative of an exploration is one written by the explorer himself, who alone can have intimate knowledge of experiences met with during the expedition or describe the considerations which led him to move in one direction or another. This is usually understood, and that a plain record of travel, even though given and expressed in commonplace phrases, makes much closer contact with human feeling than the most brilliant literary effort of a spectator or historian. It follows that as scientific investigators themselves possess the first-hand knowledge of the meaning, the methods and the conclusions of their researches, they are best qualified to translate this knowledge to the public. Few men of science care, however, to be diverted from their work in the field or laboratory in order to share the press publicity equally afforded to assertive paradoxers and discoverers of marvels, which if true are not new and if new are not true. Though his story may well be worth telling, an original investigator usually shrinks from entering the province of popularization of science and has a feeling that to do so involves a loss of dignity, as well as a loss of respect from his colleagues.

So long as this reluctance prevails among scientific workers, they must expect the exaggerations, inaccuracies and omissions with which scientific matters are commonly handled in the periodical press. A not inconsiderable section of the public is prepared to be interested in lucid accounts of new conceptions in science and the evidence upon which they are based; and we suggest that it is a duty of men of science to assist in making such information known. There is no hesitation in communicating new results to scientific and technical periodicals, and probably not one per cent. of these announcements or papers could be made intelligible to general readers. Even this small proportion is sufficient, however, to provide impressive scientific news if described in clear, understandable language; and if it is not so presented, science as well as the world loses much of the value of the new knowledge.

Most admirable work for science publicity has been carried on in the United States since 1921 by a non-profit-making corporation called Science Service. The establishment of this institution for the purpose of disseminating scientific information to the public is due to a man of high ideals—the late Mr. E. W. Scripps—whose long and wide experience as newspaper editor and proprietor convinced him of the importance of scientific research as the foundation of national prosperity and the guide to sound thinking and living. Mr. Scripps himself drew up the scheme showing the general method of work of an association or organization for the propagation of scientific knowledge and placed $30,000 a year at its disposal at the beginning. He provided also that at his death the sum of $500,000 was to be available for the promotion of the objects he had in mind. The follow-

ing paragraphs from a memorandum prepared by Mr. Scripps in 1919 show clearly his purpose in founding a press publicity service:

> The object of this institution, the American Society for the Dissemination of Science, should be to make the greatest use of the press in the way of disseminating the knowledge which is the result of painstaking research carried on by a few hundred, or at least a few thousand, well-trained men equipped with great mental capacity.
>
> The first aim of this institution should be just the reverse of what is called propaganda. Its objects should never be to furnish argument or facts for the purpose of producing partisans for any particular cause. Its sole object should be to present facts in readable and interesting form—facts on which the reader could and probably would base his opinion on a subject of policies or sociology or concerning his duty with regard to himself and his fellows.

Science Service is the concrete expression of Mr. Scripps' belief that the unity of the professions of science and journalism could be used effectively to educate the community in the factors which vitally influence human welfare and progressive development. It is under the control of a board of trustees composed of nine men of science and six journalists, the scientific members being nominated by the three leading national scientific bodies in the United States; and it occupies offices in the fine building of the National Academy of Sciences, in Washington. The director and managing editor of the organization is Mr. Watson Davis, whose training as a physicist and engineer, combined with experience as a journalist, make him particularly well qualified to know what scientific news will interest editors and general readers, and also how to make new scientific knowledge intelligible to the laity.

The activities of this science news service are many and various, including a daily syndicated service to newspapers, special reports on current topics and events, interpretive articles suitable for editorial columns, special articles written by leading men of science and other authorities, science news talks for broadcasting stations, a weekly publication entitled *Science News Letter* in which the current progress of science is concisely summarized and illustrated, and as a central bureau for the distribution of seismological, magnetic and solar observations of current interest. Science Service has in its offices at Washington a staff of writers each of whom can deal with scientific matters in a particular field, such as medicine, biology, archeology, psychology, chemistry, physics, astronomy, engineering and so on. At a number of capitals in the world, and at centers of research in the United States, the organization has competent correspondents who cable, telegraph and post special news of scientific discoveries or developments to Washington, whence it is edited and distributed by telegraph and mail to newspapers throughout the country. About one fourth of the newspaper readers of the United States have the opportunity of reading something by Science Service, daily or weekly.

It would be to the advantage of science and the newspaper press if similar organizations for science publicity were established in other countries and cooperated with one another in an international science agency. Science Service already expends a considerable sum annually on scientific news from Great Britain, and it is hoped that a bureau will eventually be established in this country to supply newspapers with scientific matter in the same way as is done so successfully in the United States. Several attempts have been made to found such a science news service here, but little encouragement has been given to them by either men of science or newspaper editors. Ten years ago the British Science Guild arranged with Mr. G. D. Knox, a journalist who devoted particular attention to scientific subjects, for the preparation of suitable articles and notes on scientific topics and events, as well as special contributions by leading authorities, for distribution to the public press on an agreed scale of payment. This service had, however, to be abandoned through lack of support. In the report of the Council of the Guild for 1923–24 it was pointed out that there was little prospect of the service being self-supporting; and on this account it could not be continued. The position was expressed in the report as follows:

> It may be doubted whether the Guild can appropriately take up the functions of a Press Agency on a commercial footing, for that would mean the appointment at a suitable salary of a director familiar with agency work, and also an office adequately equipped to carry on work of this kind. If sufficient funds were available, such a Science News Agency could, of course, be established, and its activities would undoubtedly prove of decided advantage to both pure and applied science; but in the absence of such support, the Guild could not undertake the financial responsibility which such an agency would involve.

Since that time other efforts have been made to prepare and distribute scientific news through a central bureau, but with no better success. In recent years, however, Dr. Victor Cofman, a European correspondent of Science Service, and Donald Caley, Fleet Street journalist who specializes in science and is British correspondent of Science Service, have devoted much time and attention to the subject. It is to be hoped that these efforts will be encouraged, but a science news publicity service can not be self-supporting from the beginning, and funds will have to be provided by private benefactors or societies inter-

ested in the promulgation of natural knowledge if it is to be placed on a permanent footing. The annual income of Science Service, Washington, is about $100,000, and it is made up of $70,000 for services to newspapers, sales of books, etc., and $30,000 from the Scripps' endowment. There is an operating deficit of about $30,000 annually on the whole working of the service, but this is largely due to developments continually being undertaken in the spirit of the endowment.

Dr. Cofman estimates that the cost of maintaining a science news service in this country to supply about twenty news items a week, that is, about half the number issued by Science Service, Washington, would be of the order of £1,500—£2,000 annually, made up of salaries of director and clerical staff, office expenses and payment for scientific information. An exchange arrangement with scientific news agencies abroad would considerably enlarge the service without adding greatly to the cost. The income derived from payments by newspapers for news or articles published is scarcely likely to amount to one half the expenditure involved in the service, so that unless a substantial subsidy is forthcoming, to cover a period of, say, five years, there seems to be no possibility of establishing in Great Britain a science news service like that in the United States, even on the most modest scale. As a business undertaking, such a service can not be a profitable proposition for several years. In the absence, therefore, of a far-sighted public benefactor who will follow the example of the late Mr. E. W. Scripps, science must continue to suffer from inadequate and inaccurate representation in the public press generally.

It can not be said that scientific societies or scientific men themselves exhibit much interest, and certainly no enthusiasm, for the establishment in this country of a science publicity service worthy of their confidence. It is true that summaries of lectures and papers given before bodies like the Royal Institution and the British Association are prepared for distribution to the public press, and that some scientific departments similarly issue descriptive digests of the main points in official reports. To make the best use of this material, however, it needs to be passed through the mind of a journalist familiar with science as well as with the interests and limited knowledge of newspaper readers in general. No single individual can be expected to deal in this way with every scientific subject, but it should be possible to bring together a group of scientific journalists, as is done in the offices of Science Service, capable of presenting the major scientific news to the press in a form which would be acceptable to editors and the public. The time will come when agencies for the collection and communication of such news will be used just as extensively by newspapers as those which deal to-day with political affairs.

It must be apparent to any one who devotes a little consideration to the methods by which the announcements of scientific advance reach the public through the press, that present arrangements are far from satisfactory. The field is only partially covered. Only in any branches of inquiry which happen to be very much in the public eye at any given moment is any attempt made to keep the public adequately informed of what is being done. Still less is any attempt made to place before it regularly the relation of any advance to the general body of knowledge or the bearing of discovery on the interests of the individual and the community. As an example of what might be done on a larger scale, it is sufficient to point to Sir James Jeans's books, in which new conceptions in astronomy and physics and the intellectual foundations of science are presented, or Professor Julian Huxley's broadcast talks, particularly those which dealt with the effects of discovery in pure science when applied to industrial processes and methods. It is surprising to what a large body of readers these books and a few others of like character have come as a revelation of what is being done in the realm of pure science and how it touches their lives at many points, without that fact having been appreciated by them.

These considerations and others of a like nature lead to the reflection that while there is ample material available which would prove not only of the greatest interest but also of the greatest moment to the public to know, it does not reach that public through channels which are ready to receive it, if the demand were made plain, owing to a defect in organization. The press, which should act as an intelligence officer for the public, to keep it informed of matter of importance to its welfare, is itself imperfectly informed. This is not necessarily a fault to be imputed to the press. Just as there is a body of experts—Reuters, Press Association and other agencies—who handle foreign news, supplemented it is true in the case of the more important journals by experts of their own—their foreign correspondents—so in scientific matters the news could in the first instance be handled by a body of experts, a scientific news agency which could collect its material from scientific bodies and individuals, and then prepare it for circulation to the press. This would insure that the ground was systematically covered and that nothing that was of interest or moment to the public was overlooked.

In any such organization of scientific news, it should be remembered that the function of science is twofold. In the first place as a body of knowledge, man's endeavor to satisfy his curiosity about the uni-

verse and all that therein is, the aim of science is to add to itself, to enlarge its circle in all its branches until it has become all-embracing—an ideal no doubt impossible of attainment, but nevertheless continually stimulating the research worker and spurring him to further endeavor. But secondly, as science—ordered knowledge of facts—first arose from man's endeavor to understand the material and the spiritual world for the promotion of his own ends—the stars in their courses for purposes of agriculture and navigation, the ways of animals and plants for his own food, simple principles of topography and hence to mapping and geography that he might find his way about his own world, the beginnings of metallurgy that he might mould better weapons of bronze against his enemies still using copper or stone, so modern science, however much it may be pursued for its own sake, has nevertheless a practical end in view, in some sciences more remote than others. When the Augustinian monk Mendel began to cultivate sweet peas, with the object of learning exactly how tall and short peas when crossed passed on their qualities to their offspring and subsequent generations, it is unlikely that it was in his mind that the principles he was then to formulate would attain an importance we are only now beginning to appreciate—principles which when more fully understood will not only affect great financial interests in all undertakings—such for example as the meat and milk industries—in which questions of breeding enter, but may also affect very seriously questions affecting social reform and the future of the human race.

It would be possible to multiply almost indefinitely the questions of social and political well-being upon which the results of scientific research impinge no less directly than the theory of heredity. As these researches and many others affect the well-being of the citizen and the community directly, it is surely the duty of the press as a service of public utility and the man of science as a citizen as well as a discoverer, to effect a *rapprochement* in order to create a public opinion which will insure that no advantage may be lost which might accrue from the application of the results of scientific research to the needs and amenities of daily life. A more intelligent and more intelligible consideration of scientific work and thought is desirable in the public press because of their close contacts with many national and international problems. Under the conditions of modern civilization, the community in general is dependent upon science for its continued progress and prosperity. Under the influence of modern scientific discoveries and their applications, not only in industry, but also in many other directions, the whole basis of society is rapidly becoming scientific; and to an increasing extent, the problems which confront the national administration involve factors which will require scientific knowledge for their solution.

It is in these directions that the press can render the greatest service to science and the public at the same time. Under the present social and educational system, it is not possible to hope that at any very early date our schools will turn out a population of scientifically trained men and women. But it is becoming recognized, though slowly too, that what is needed is not so much detailed or expert knowledge of science, as the scientific outlook. The function of the press, more readily to be appreciated perhaps when something of this scientific spirit has been inculcated in the schools, might very well be, by fostering this outlook, to insure that the problems of government and administration, of society and of economics, are approached with scientific understanding. The problems of politics and society are not to be solved by the reiteration of party cries adopted by "little Liberals and little Conservatives," to use Gilbert's phrases of a bygone day, but by patient scientific consideration of the facts viewed in the full light of scientific knowledge and after a careful weighing of evidence. Here the press, without departing from its tradition, and if it is prepared to trust the interest and intelligence of its public, might serve itself, science and the state.

SCIENTIFIC EVENTS

RESEARCH ON NUTRITION IN GERMANY

THE regular Berlin correspondent of the *Journal* of the American Medical Association writes as follows:

"Federal health administration has been taken over by the Reichszentrale für Gesundheitsführung, which consists of eleven different federal *arbeitsgemeinschaften,* or mergers. The department of general nutrition is under the direction of Professor Reyher. A firm union of all the organizations combined in this department insures the avoidance of dangers that might threaten the enforcement of the common principles and prevents the special interests of any one group gaining the upper hand. In questions requiring special scientific study the federal bureau of health is ever ready to advise the members of the reichsarbeitsgemeinschaft, who are recruited from the different schools representing German research on nutrition. In addition to the testing of the modern principles of German science of nutrition, research on the biologic value of food products and the care of the foods themselves is being conducted. Emphasis