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LIFE OF SCIENCE is the organ of the CIRCLE FOR THE SCIENCE OF SCIENCE (Konwersatorium Naukoznawcze) in Kraków, Poland. The Circle was founded in 1945. Its purpose is to carry on the scientific research work in all branches of the science of science, i. e.: theory, methodology, history, sociology, psychology, and organization of science together with education, as well as publishing and organizational activities. The Circle for the Science of Science facilitates the exchange of information and the collaboration of the representatives of all scientific lines interested in the science of science and unification of knowledge.

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POLISH SCIENCE AND THE POLISH NATIONAL REVIVAL

by BOLESŁAW BIERUT, the President of the Polish Republic

(This speech was held on the inaugural meeting of the Chief Board of Science and Higher Education, on 22nd January, 1948).

IT IS a long time ago that the need for reorganizing the Polish Science and the higher schools was stated as urgent and the first task of the reorganization was to cancel some harmful retardations and checks in the development of science which is one of the basic fields of social life. I express my best wishes to the chief Board of Science and Higher Education which stands for the centre planning and coordinating all scientific works, programmes and organization in this sphere and I hope that the reform

carried through lately will make under its direction a real turning-point spreading all over Poland and influencing a wide group of scientists — teachers, investigators, theorists and thinkers. In the present state of restoring the tremendous damages of the war a rapid development of science in Poland is especially necessary for the creation of the modern economy and for the new Polish revival.

The Chief Board of Science and Higher Education as the organ of central self-government will take care of realizing the idea of planning in the field of scientific investigations, of educating professional staffs and spreading all over of education and culture. The idea of planning which is being possible to get realized in the state of the common people's democracy shall not be vulgarized. It is just and real only in a definite structure of state and only by some definite objective it brings positive results. The spreading all over of education, science and culture does not mean bringing them down to a lower level. There is also no tendency towards the limitation of freedom in the choice of the scientific investigations.

Appreciating the creative influence of collaboration with all centres of the progressive scientific thought in the world, the Polish science should push forward its own conquests and by doing so enrich the treasury of the interhuman knowledge tending to peace, general welfare and the development of all man's creative powers.

SOME THOUGHTS UPON THE POPULARIZATION OF SCIENCE AND OF ITS SOCIAL IMPLICATIONS

by J.M. BURGERS

ON THE days 6th and 7th of December 1947 a meeting of a group of people interested in the popularisation of science was called together by UNESCO in Paris. The author (professor of aero- and hydro-dynamics in Delft (Holland), secretary of CSSR (Committee of Science's Social Relations) of ICSU (International Council of Scientific Unions) and member of the Historic Commission of Science's Social Relations in the International Academy of the History of Science who partook of the meeting, puts down in his article some thoughts concerning this matter. These points are as follows:

1. The popularization of science becomes now a very important social problem, for without an adequate understanding of methods, results and aims of science pervading the community there is neither possibility of applying the science to the rational organization of the social life on a proper scale in particular countries nor means for an international collaboration.

2. The development of science went the wrong way because the mankind does not adept to the possibilities which science affords. So far the scientific investigations introduced into the society brought only bad results in

regard to the interhuman relations because of their maladjustment. At present the scientists feel more responsible for the social implications of science and the scientific work.

3. There are three groups of people in connection with science: a) the scientists whose chief aim is the creative work, b) people who have means to realise the scientific investigations and use them only for themselves. They are to the greatest extent responsible for the social implications of science, c) the vast majority of the society not acquainted with the value and the social implications of science.

4. We should aim to an organization of society grounded on the results of scientific investigations. For this purpose the public opinion should be educated by a serious popularization of science and made to see its social function, the possibilities it affords and the dangers it implies.

5. The most important points to assume an appropriate attitude towards science and to make possible the fruitful application of its results to the society are: a) avoiding to apply the scientific results in an uncritical way and b) planning the proper use of the earth's natural supplies.

6. An important object in popularising science is to combate the tendencies for „mechanical thinking" which lead to a loss of sentiment for deeper values of life. All must be done to restore and to strengthen respect for life and for the value of both diversity and harmony in it.

People must learn to see that no new application of science comes about by extrahuman means because in every case there is a deliberate choice and action of some people or of a group of people. They must also understand that the application of science can be carried out in various ways good or bad.

7. The popularization of science and its implications must bear close relations to the everyday life. Its main instrument should be school teaching and all forms of adult teaching.

In the last point the athor mentions a series of problems which first of all should become the subjects of popularization.

TECHNISCHE HOOGESCHOOL, DELFT

THE MINISTRY OF EDUCATION IN RELATION TO SCIENCE AND THE HIGHER SCHOOLS

by EUGENIA KRASSOWSKA, the Secretary of State for Education.

(The guiding principles of programme presented on the inaugural meeting of the chief Board of Science and Higher Education, on 22nd January, 1948).

THE DECREE of the 28th October, 1947 about the organization of science and higher education in Poland was a necessity and was issued to replace by new legal regulations the old prewar bill which expressed the tendency of the state to the administrative and police supervision of the universities

and its neglectful relation to science. Poland reaches now to the progressive forms of its social and economical structure and this implies a great increase of the importance of science which is respected as an obvious factor of the progress, as the source of the critical understanding of the world and the best instrument serving to use this understanding for the good of particular nations and of the whole mankind. For Poland reviving after the last war the matter of science becomes a matter of national being.

The reform carried through now has to create the best conditions for the development of science, to democratise science and the higher education associating them with the general economic changes. It also has to create the conditions for the education of the new intelligentsia of common people The universities are to collaborate in educating the new man.

The Chief Board of Science and Higher Education makes the planning and coordinating centre. It consists of the Minister of Education as the official chairman and 14 members. According to the new bill 2/3 of its members should come from the active scientific workers. In practice all appointed to the Chief Board, except two representatives of the social activities, are men of science. In many chief questions referring to science the chief Board is the decisive organ, in others it is only consultative.

The idea of central leading all matters of science requires consideration of the basic postulate: „nothing about science without science". This postulate was realised by preserving the basic functions of the self-government organs in the particular universities and by constituting the chief Board as the self-government organ of higher rank. The latter combines in the accordant collaboration the scientific and social factors with the administrative and political representative who is the Minister of Education.

The idea of planning is consistent with the reasonably understood freedom of science. It must be objectively stated that the fundamental rules of the freedom of science are taken into consideration in the decree and shall be further preserved. Nobody in Poland denies the right of scientists to confront their scientific views. No view is nor will be furthered by administrative means. When different views contest, there shall be victorious one leading to a greater testability and objectivity of its scientific results, and helping the nation in its difficult way towards progress. The freedom of science requires, however, the criticism and scientific control making it independent of dogma and narrow tradition, and constant perfection of the scientific instruments.

The postulate of the social function of science does not mean fostering only the so called „applied science" and neglecting the so called „pure science" *i. e.* the theoretical studies.

The special role of the Chief Board as the planning and coordinating centre is to solve seven following problems in the sphere of science:

a) scientific specialization of the universities, b) structure, character and network of the scientific research institutes, c) increase of efficiency of the scientific societies, d) establishment of a publishing plan, e) organization of the scientific printing, f) education and enlistment of a new staff of the scientific workers, g) financing science.

From the subject of the reorganization of studies there should be mentioned the introduction of some new subjects compulsory for all students (for instance: „The Modern Poland"), their more social and modern outlook, and their becoming more efficient and more practical.

STUDIES ON THE CORRECTNESS OF THE SCIENTIFIC INVESTIGATIONS

by JÓZEF PIETER

THIS ARTICLE contains two fragments of the author's paper on the criteria of scientalness of the scientific works. In the introduction to this paper the author puts the emphasis on the need of setting up the criteria of „scientalness" and defines the concept of the scientific work and the aspects of „scientalness". In the following chapters the author discusses: the formal-logical correctness, the correctness of „the scientific craft" and of the scientific problems, the correctness of the „technique", the originality of any work and the heterogeneous criteria of scientalness. The paper ands with a series of conclusions and practical postulates.

In the first fragment a special stress is put on the meaning and the role of the method in the scientific works and investigations. The method determines the result of the investigations and the progress of science. All scientific truths are determined, controlled and criticized by means of some definite methods. The more advanced are the investigations in a given field of science, the more evident is the dependence of the critical justification of a given work on the method as the main instrument. The method itself is based on more or less complicated „craft" which should be known and mastered. Thus the principle of criticism exercised on a concrete scientific work, especially in mathematics and natural science, is to investigate chiefly into the correctness of the author's „scientific craft". It means of course, that the critic himself must be well acquainted with the methods used in the given science. The critic who does not know the „craft" (appropriate to such and such research nor studies the latest news of methodology of the given science) cannot talk about the „material truth" in the sphere of the given scientific work.

The correctness of the problem makes the second criterion of the „scientalness" of the scientific works. Criticizing a scientific work we must put two important questions: 1) Is there any scientific problem in the given work? 2) Is it presented in a good or a bad form? The author bears in mind the fact that the valuation of the correctness of the scientific problems is a much more difficult task than finding out pure logical mistakes. The valuation of the correctness of the problem (in a given work) understood as the adjustment to the actual problems of the given science (this point is put forth by the „problem-routine" of the critic-reviewer) must be distinguished from the valuation of the originality of this problem. This valuation is rather easy if we discuss some problems once considered and settled for ever.

In spite of the great difficulties, we should drive to the precise valuations and try to define the typical „degrees" of correctness in regard to the problems of the scientific works. According to the author the works with problems which are explicit, entirely clear and adjusted to the current state of science, are the most correct.

PEDAGOGICAL INSTITUTE, KATOWICE

FACTS AND OPINIONS

ON PURE AND APPLIED SCIENCE. Referring to the letter on the social responsibility of scientists by Prof. Norbert Wiener from the Massachusetts Institute of Technology (published in LIFE OF SCIENCE, No. 21—22), Prof. Stanisław Gołąb from the Mining Academy, Cracow, points out the inadequateness of the still current opinion that there exists a special division between pure and applied science. Prof. Wiener's case may serve for the best example to prove the contrary. In the course of the war he interrupted his studies on pure mathematics and devoted himself to the most typically „applied" science, *i. e.* one concerned with war. The author discusses further various problems of mathematics in connection with his speciality. He stresses the need of appointing several professors of applied mathematics to encourage in this country the formation of special centres of mathematical research such as in Rome and Amsterdam.

Nevertheless the development of science as well as the actual life prove that all spheres of science so far divided into pure and applied should be united by means of a congruous cooperation of scientists interested in various fields of researches.

SCIENCE IN POLAND

JUBILEES OF TWO POLISH SCIENTIFIC SOCIETIES. Towards the end of the year 1947 two important scientific jubilees were celebrated. It was in 1901 (the fortieth anniversary passed during the war) that the Scientific Society of Warsaw (Towarzystwo Naukowe Warszawskie) was founded, and ninety years ago in 1857 the Friends' of Science Society in Poznań began its activities. Both of them were set up in the period of the partition of Poland. The origin of the Warsaw society dates as far back as 1800, when the Friends' of Science Society started in Warsaw; it was, however, dissolved by the Russian government after the 1831 insurrection and it was not until 1907 that it was reestablished under the new name of Scientific Society of Warsaw. The Poznań society played a very important part in the action of opposing the anti-Polish policy carried on by the Germans in Prussia. Both societies were doing their best to promote the development of science on the occupied territories. A new period of their activities began in 1918 when Poland regained its independence.

The Warsaw Society set up five special sections: 1. for linguistics and history of literature, 2. for history, philosophy, and economics, 3. for mathematics and physics, 4. for biology and medicine, and 5. for technology and agriculture. In the Poznań society special committees for history, philology, mathematics and physics developed most efficient activity. A new flowering of both societies was witnessed in 1945, immediately after the liberation of Poland. Numerous publications and reports are constantly being issued and attention should be paid especially to the Poznań periodicals such as ANNALS OF SOCIAL AND ECONOMIC HISTORY, HISTORICAL ANNALS, and HISTORY AND LAW REVIEW. The first two are summarized in French, the third is published in Polish and French. The studies of the Poznań society are recently concentrating on the problems of the Regained Territories, namely those on the Baltic shore, and by the rivers Nysa and Odra.

It is worth mentioning by the way that in the present year the 75th anniversary of the Polish Academy of Sciences and Letters, the most outstanding scientific institution in Poland, will be celebrated in Cracow. All those scientific academies, as well as other similar societies, are very willing to reconstitute now a closer contact with scientists of the whole world.

THE POLISH ECONOMIC SOCIETY. The annual Congress of the Polish Economic Society was held lately in Gdańsk. The Society develops a manifold activity: lectures, discussive meetings and scientific congresses are organized, to provide a contact of all Polish economists, theorists and practitioners. Foreign visitors are often invited to this country, to give lectures. A house in Warsaw, formerly the Society's Headquarters, is now being restored for this purpose.

The most important is the publishing activity. The Society publishes various scientific papers of the Polish economists and translations of foreign works. It also resumed the publication of its quarterly: „The Economist". An edition of the annals in English is now being planned. The President of the Scientific Council of the Society is Prof. Adam Krzyżanowski from Kraków; Prof. Edward Lipiński from Warsaw is the Chairman of the Chief Board. The address of the Chief Board: Warsaw, Aleje Jerozolimskie 93/46

LITERARY CRITICISM CLAIMS NEW SCIENTIFIC METHODS The second post-war congress of the students representing Polish Philology centres was held in Cracow from Oct. 31st to Nov. 3rd, 1947. It was quite an event because it is concerned to have marked a turning point in the methodology of the literary criticism in this country. It was proved that present studies of literature concentrate chiefly on the problems of methodology, and that after psychologism and philologism have been rejected two basic methodological points of view may be taken into account, i. e. formal and sociological. Sociological attitude is a new and vital tread to which credit must be given for a considerable number of valuable achievements. Particularly efficient in this field is the centre of literary reserach in Łódź.

Those who use the sociological method though they are against the formalism in principle appreciate its value for the description. They concentrate, however, their efforts chiefly on the investigations into the social origin of literary works and the sociological interpretation of their meaning and influence.

SCIENCE ABROAD

SUMMARY OF THE UNESCO'S ACTIVITIES IN 1947. A detailed account of the first annual report for 1947, the first year of the UNESCO's activities, appeared in its official publication LE MONITEUR DE L'UNESCO (1947, No. 3). The report was presented by the president, Dr. J. S. Huxley, on the second session of UNESCO's general conference which was held in Mexico in November 1947. In our article the main points of the report are briefly summarized.

Some time ago we published a long article *International intellectual collaboration now and before* by Prof. Jan Muszkowski who discussed in detail the origin, organization and programme of UNESCO and drew a comparison between this institution and the Commission and Institute on Intellectual Collaboration, formerly existing within the League of Nations (LIFE OF SCIENCE No. 13—14).

THE DISCUSSION ON THE ATOMIC ENERGY. Under the above heading we publish a review of a series of articles by various authors which appeared in USA in 1946 in form of a special publication entitled *One world or none* and issued by the Federation of Atomic Scientists. The authors of the articles are the most outstanding American physicists who in the course of the war were conducting the investigations into the atomic energy, and other remarcable persons such as General H.H. Arnold, commander in chief of the USA Air-Forces, and Walter Lippman, the well-known American journalist.

The publication deals with the principles on which the atomic bomb works, its role in the war and the possible means of preventing any war in future, particularly the atomic war.

MATICA SLOVENSKA. It was first in 1919, after Chechoslovakia had regained its indepedence, that Matica Slovenska was reopened, and from that time dates its tremendous development. The activities of Matica concentrate at present on three chief sections: 1) scientific investigations, 2) mass education, 3) publishing activity. The most outstanding Slovak scientists are members of the Section of Scientific investigations, which is divided into various departments. The scientific library of Matica contains more than 300.000 volumes. Scholarships for studies abroad are being granted to the scientific workers. Lately, regular salaries have been offered to a number of scientists so that they may be spared the financial troubles, compelling to take additional jobs. The chief aim of Matica is the same as that of other, corresponding institutions, eg. UNESCO. It is to lead its country to the realization of the idea of a properly understood, brotherly commonwealth of Culture for all the nations of the world.

THE TENTH ANNIVERSARY OF RUTHERFORD'S DEATH. In connection with the tenth anniversary of Ernest Rutherford's death a meeting of physicists from 16 countries was held in Paris. On the first day (7th of November, 1947) a solemn commemoration in honour of the dead scientist was celebrated. The next day was spent on reading papers an discusing the actual scientific problems.

Besides many papers on the problems of modern physics there were some referring to the general scientific problems. For instance prof. Marshak wrote on the international control of the investigations into the atomic energy while prof. Bernal talked about the whole of science in solving the modern economic problems.

THE 10TH INTERNATIONAL CONGRESS OF PHILOSOPHY will meet in Amsterdam on August 15th, 1948. The ideas of Man, Humanity, and Humanism are chose for the main theme. The secretary's office of the Congress is directed by Prof. E. W. Beth; the address of the office is Bern. Zweerskade 23, I. Amsterdam-Z.

From No. 23—24:

FIFTH INTERNATIONAL CONGRESS OF THE HISTORY OF SCIENCE. *By Mieczysław Choynowski.* The Congress took place in Lausanne between Sept. 30th and Oct. 6th, 1947; it was convocated by the International Academy and the Union of the History of Science. Prof. A. Reymond, former president of the Academy, took the chair. In all forty papers were read. Five committees of the Academy were formed, namely those for the history of social relations of science, bibliography, publications, the Near East, and the teaching of the history of science. New officers of the Academy were elected as follows: president — Prof. P. Sergescu; perpetual secretary — Prof A. Mieli; president of the Union — Prof. C. Singer. Until now the Union comprises nine countries: Belgium, Brazil, Czechoslovakia, France, Great Britain, Palestine, Portugal, Roumania, and Switzerland. Other countries will join after the formation of their national groups for the history of science. The next congress is to take place in 1950 in Bucuresti; it will be devoted to the problem of influences and precursors in science.

ONE YEAR'S ACHIEVEMENTS OF THE STATE INSTITUTE OF BOOK. The State Institute of Book has been set up in Poland in 1946. It is a scientific college inquiring into all problems concerning books directly or indirectly. The Institute is submitted to the Board of Education and collaborates with the Ministry of Arts and Culture. It develops many activities, organizes the State centres of documentation, encourages all sorts of inquiries relating to books and facilitates the practical applications of the results of bibliographical studies. The Institute has its headquarters in Łódź (Narutowicza 59), its director is dr A. Łysakowski.

The annual foreign subscription rate is 5.00 Dollars. Subscriptions and all other communications should be addressed to
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