

# Jewsiewicki, W.

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## [Among many interesting problems...]

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Artykuł umieszczony jest w kolekcji cyfrowej Bazhum, gromadzącej zawartość polskich czasopism humanistycznych i społecznych tworzonej przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego.

Artykuł został zdigitalizowany i opracowany do udostępnienia w internecie ze środków specjalnych MNiSW dzięki Wydziałowi Historycznemu Uniwersytetu Warszawskiego.

Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.



For the historians, the additional course III is not needed as it forms a part of their general training; for the philosophers — correspondingly — the special course IV is superfluous; for both of them the course II cannot be envisaged as they have no specialized training. For those who do not propose to become historians of science and technology the items III and IV are unnecessary.

The realizing of that plan necessitates the creation of teaching materials concerning all those four groups of subjects. Our Institute of the History of Science and Technology is now proceeding to fulfil that task.

### *J. R. Ravetz*

I regret that I must disagree with Professor Ronchi, perhaps I am still (relatively) young and optimistic. In England and America the situation for history of science is very favourable. This may be because the transition from "Little Science" to "Big Science" has been very rapid, and the scientists want help in understanding their situation. The young students I meet do not believe that they are learning absolute truths, rather, their attitude is even more dangerous — to them all their science is techniques and "conventions".

In England we now find that there are more University jobs than competent people to fill them (unfortunately we can each take only one lectureship); only ten years ago several excellent scholars (including Mason, Lilley and Cardwell) were unable to find positions as historians of science.

It seems then, that we can build a healthy discipline if we can find promising students to train. On this point I must again disagree with Professor Ronchi. There is no doubt that a specialist historian must be competent to understand the technical material he studies. Also, he must have the sense of how research proceeds. But it is not necessary to be fully conversant with current progress in the analogous field. Indeed, it is useful to be forced to train oneself in the technicalities of a science in a past period, for then one may gain a better appreciation of the characteristic methods and problems of the particular science.

### *W. Jewsiewicki*

Among many interesting problems talked over by the lecturer there are those concerning the teaching of the history of science and technology and the training of the research and didactic cadres. The problems

raised correspond clearly with those advanced by Professor Taton in his report; that is why during the discussion on the advanced propositions, the former's subject may sometimes repeat itself, be in common.

The idea and the subject of the history of science and technology as well as its interrelations were already thrashed out in the precedent days of the Symposium. I wish to venture upon stating that all problems are clear, that the historians of science and technology have come to an agreement about the subject and purposefulness of their research. This fact involves a great concern about the following generation of historians of science and technology, a concern about new cadres of researchers.

It is, then, the concrete didactic problems that ought to be discussed. Including the history of science and technology into the study programme of universities would greatly avail. It is advisable to create chairs of history of science and technology which similarly to those of other humanistic disciplines will carry on both research and didactic activities.

What are those activities like?

My own point of view on the scientific research work conducted by the chair of the history of science and technology has been presented during the discussion on Professor Taton's lecture. One should remember that among the particular sciences composing the history of science and technology, the history of technology is a synthetical science in itself — since it consists of histories of many branches of technology.

That discipline alone presents, then, many difficulties. A person with technological education will meet — when starting the inquiries into the history of technology — with fundamental difficulties chiefly for want of knowledge of historical methods. Analogically, a person with historical education will meet with difficulties owing to the ignorance of technology. Considering that the didactic worker of a university type should be a specialist, that is a researcher of one of the sciences — which was explicitly stressed by Profeso~~s~~r Ronchi — such a state of things does greatly complicate the problems concerning the staff of the chair and the direction of its scientific research.

It stands to reason that the chair ought to consist of a team of scientific workers among whom should probably be some specialists in different scientific disciplines. I believe — let it be repeated once again — that the first task of the chair will be to start general inquiries in the way of the history of science and technology, as well as inquiries aiming to work out a methodology and a working technique both for research and didactic needs. The further activities of the chair will depend on the degree of specialization of faculty members, for example the history of social sciences, of natural sciences, of medical sciences, of technological sciences and of technology.

Unlike the historian of politics or economy, the historian of science and technology, as of a synthetical discipline, ought to be a specialist in his own domain of science, for example in the history of optics, mechanics, shipbuilding or in the history of pedagogy, psychology, sociology — and besides a specialist in the synthesizing science of a higher order: the history of science and technology. Therein lies the specificity of the subject, the specificity of difficulties linked with the training of secondary school teachers and of future researchers in the way of the history of science and technology.

Such is, I think, only the transitional state in which — it is to be hoped — the contemporary scientists will form, for themselves and for the future generation of scientific workers, the methodological and methodical foundations of the history of science and technology. The research and didactic effort is double for our generation, it will however considerably diminish for the students who will have passed to an independent work. For there will be no ground for a double specialization: a particular and a general one; there will only remain a uniform science without difficulties imposed upon by the specificity of the subject of transitional period. The pioneers will leave the field to competent specialists in the history of science and technology. Such is, I think, the reason of history.

The didactic activities of the chair may be as follows:

In supposing that the chair is an accomplished fact; that it is headed by a professor specialized in the history of one of the branches of science and specialized in the history of science and technology who synthetically approaches the problems composing it; that it is composed by at least two more workers of a character similar to that of the professor — one may proceed to discuss the forms and methods of teaching the subject, and to discuss the study programme.

From among two variants of locating the chair — as an inter-departmental chair or as a chair attached to the historical faculty — I would choose the latter not only because of the term "history", but also because of the fact that the study of history, as regards the scope of its concern, begins to approximate more and more to the history of science and technology.

The didactic activities of the chair comprise lectures and exercises:

1) Lectures at all university departments for higher years of study — as regards the national and the general history of science and technology.

2) Lectures in the last year of historical study for students specializing in the history of science and technology; from among them the chair selects future scientific workers. Hence it follows that the adepts in historical study will become the future highly qualified historians of science and technology.

3) Seminars and practical studies, referred to by Professor Taton, on the subject of various, concretely elaborated historical problems of particular sciences or on the subject of fragmentary questions in the field of the history of science and technology.

I do not disregard the difficulties existing in the domain of research and of teaching the history of technology. It is a hard thing for the historian to master the extensive technological knowledge. In the present case, there arises a new problem which we begin to touch every day. Who is to become a specialist, strictly speaking a specialist in the way of research and didactics? A professional historian or a professional technician?

Since we admit that the technological progress is, according to Professor Olszewski's theses, a very important factor in the history of technology, the scientific worker who conducts inquiries into the history of technology should have regard only for the new technological idea, the progressive and leading idea of a concrete historical period. He should, therefore, distinguish a technological achievement from inventions, appliances and constructions of a series type, that is of a type that recurs and — using the sportsman language — merely equalizes the achievement. This may be brought to effect only by a specialist in a given branch of technology. There were many inventions of the telephone, which of them, however, was on the path of progress and paved the way for development?

The historian will get lost in those matters, and even the consulting technician will often not be able to help him. On the other hand, the technician who investigates the history of a certain branch of technology without knowing the historical methods will give nothing but an enumeration of inventions and will find difficulties in connecting his study with the epoch, with social influences, with the reaction of economic, legal and other phenomena. Some of the historians claim that the technological values of an achievement in the domain of technology, made out by the historians with an inadequate precision will be a lesser evil than the estrangement of technology, through ignorance, from the general social phenomena.

It is worth while to speak about those matters for they are, too, of no little importance in the didactic studies, more particularly in seminars. An inexact and even vague information in the way of technology does immediately arouse dubitations among students, frequently interested in technological problems. At any rate, when conducting practical studies of technological problems, even of very general ones, one must always be prepared for various explanatory questions.

It seems to me that inquiries into the history of science and technology ought to be carried on rather by professional historians — without excluding, however, the technicians. A harmonious collabora-

tion of both specialists is also possible, which has been confirmed by the previous practice.

In spite of those fears and reservations, my own belief is that the history of science and technology can be, mastered indeed, as an independent speciality. I assume however that for the future historian of science and technology there will be available both monographs on the history of the main disciplines of science and technology, and instructional aids as well as manuals of university type.

As regards the teaching, it is — in my opinion — necessary to reflect once more upon locating didactics and upon the kinds of students attending the lectures of history of science and technology. Considering the fact that the subject of the history of science and technology is a common one and its division (into the history of science and the history of technology) would be, for methodological reasons, illegitimate, there arises a question of practical utility. There are separate centres for teaching humanities and natural science, technological and medical science. It is the case in Poland at least.

In which of these centres the research and the teaching of the history of science and technology as of a uniform subject should be located? I think that each of the scientific centres ought to possess its own chair of history of science and technology where not only general problems of research and didactics would be conducted, but also particular problems which are of interest for the given centre.

Professor Ronchi raised in his lecture another important problem of practical character. Who is to lecture on the history of science and technology, and who is to investigate it? I think, one and the same person only. Who wants to lecture on his own subject in an interesting and useful way, has to know it thoroughly, has to be the investigator of a given problem. Let me emphasize once more that I do not trust the workers concerned with the humanities who do not conduct any practical studies with students within the scope of their own research work.

### *A. T. Grigoryan*

Professor Ronchi's lecture is devoted to a very topical subject: to the teaching of the history of science in the higher educational establishments.

I should like to share my own experience in the way of teaching the history of science and technology in the U.S.S.R. In the Soviet Union there are about one thousand institutions of higher learning. In order to supply all of them with instructors in the history of science