

Babicz, Józef

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Józef Babicz (Poland)

THE SCHOOLS OF GEOGRAPHY

A notable achievement of the Commission for the History of Geographical Thought, predecessor of our Working Group, has been the output of the symposium held in Leningrad in 1976 on the subject of geographical schools. The selected papers, issued under the title "Les écoles géographiques" in the form of an offprint, Warsaw, *Organon* 1980, are the first collective publication on this particular subject. In it schools of geography— as a special kind of symbiosis of a master, his pupils, methods and ideas— have been presented as a historical phenomenon to be observed only in the second half of the 19th and the first half of the 20th centuries, during the period when numerous chairs of geography and other geographical institutions were cropping up. And that is why the respective writers have been concentrating mainly on an analysis of the circumstances in which geographical schools were emerging and functioning and have described their evolution and future in such terms as internationalization, socialization and diversification (Ph. Pinchemel), professionalization and institutionalization (V. Berdoulay), while stressing the role of these schools in the development of scientific disciplines, their national and international range (P. Claval), as well as the role of the historical context in their evolution (P. D. Hooson). Apart from general remarks on the emergence of schools of geography, they have also given examples of particular national schools, the American, English and other ones.

I still regard this synthetic collection of statements on the schools of geography as very valuable and stimulating. But it seems to me questionable that these schools should be treated as a historical phenomenon that has appeared only during the last century. So I have been trying to seek an answer to my doubts in the literature on scientific schools in general, especially in the collective publications, issued in recent years and being the result of discussions on this subject, that is in books bearing identical titles: *Schools in Science*, published respectively in Russian (1977) and Polish

(1981).¹ Both books deal with the same subject appearing in their titles and have a similar structure: they present the theoretical problems of schools of science and exemplify them by referring particularly to the schools in biology, physics, anthropology, law. Being collective works by specialists they are an attempt to present a synthesis of our present-day knowledge of schools in science. However the second of them contains the reception by Polish sociologists of science of the western and especially American studies in this field, while the first presents the Soviet stance toward those western ideas. Neither book deals, in its theoretical considerations, with the evolution of geography, still they do comprise some inspiring thoughts for those concerned with a study of geographical schools.

1. THE WESTERN CONCEPTIONS OF SCIENTIFIC SCHOOLS AS RECEIVED BY POLISH SOCIOLOGISTS

The Polish writers while being historians of science adopt mainly the sociological point of view. They focus on the relations in the world of scholars. And they try to approach the scientific creativity from the position of the psychologist. As sociologists they state various approaches to the problems of schools in science: the genetical approach—concerned with the ideas emanating from the master; the structural approach—concerned not with the individual but with ideas and views; the psychological approach—dealing with the thinking of a group of researchers belonging to the same school; cultural approach—concentrating on the functioning of a school, especially a national one, against its own cultural background.

This multiplicity of approaches goes together here with a wide variety of problems concerning schools of science such as: the models of education and training, exclusiveness of schools and their links with other, broader organizations of scholars, communication network in schools, functioning of paradigms, criteria of the vitality and importance of schools, especially their role in the evolution of a particular discipline. The authors stress also the multiplicity of stands and views, the polymorphism of structure (unity in variety) as a condition for the functioning of schools.

As regards the origin of schools they consider that although ideas do play an important part in schools they do not directly result from them but rather from social circumstances, that they are a phenomenon of an informal organization while at the same time tending to establish an organizational framework. Their foundation depends on such factors as the intellectual

¹ *Shkoly w nauke* (—). "Naukovedenie i problemi issledovanya". Editors S. P. Mikulinsky, M. G. Yaroshevsky, G. Krüger, G. Steiner, Moscow 1977, 522 p. (Result of a cooperation of writers from the USSR and GDR.) *Szkoly w nauce*. Collective work edited by Janusz Gockowski and Andrzej Siemianowski, Wrocław 1981, 228 p.

predisposition of a master and the position in the structure of the authority which makes it possible to carry out a particular program. While sharing the views of Kuhn on the emergence of schools as a result of overcoming difficulties in science, the authors also stress their role in the development of a discipline in spite of their negative features. In all these respects Polish sociologists take a somewhat different view from that of the Soviet sociologists.

2. SCHOOLS IN SCIENCE AS SEEN BY SOVIET SCHOLARS'

Although the Soviet co-authors of the book on schools in science do adopt the sociological and historical point of view as well, they are even more concerned with an analysis having to do with the philosophy of science. The leading Soviet representative of this area of study, M. G. Yaroshevsky, in the chapter "The Logic of a Science's Development and School in Science", considers schools to be creative associations of men of science, a social-cultural-phenomenon. While stressing the important role of schools, Yaroshevsky points to their "double function: the educational (training of scientists) and the research one", with the possibility of national and international influence. Such schools appear separately very seldom and the scientists represent them mostly jointly. In his view, without schools in science there would hardly be variety in the models of thinking, in the norms and scientific criteria. According to him it is schools which determine the lines of research and the wealth of interconnections in the sphere of science. He also thinks that "the activity of a school, its origin, evolution and regress depend on the very logic of the evolution of science". For him the essential factor is the relation of a scientific school to the general structure of knowledge. At the same time he rejects the critical conceptions of schools, especially Kuhn's conception in whose view schools reflect the immaturity of science and tend to disappear, once a model of science, a paradigm, has been accepted. He also criticizes the conceptions of Popper and Lakatos because of their negative opinion on schools in science.

From a comparison of Soviet and western views on scientific schools it appears that they differ on two basic counts:

1. On their estimation of schools: Yaroshevsky attaches greater importance to the role of schools in the evolution of science, and to the paradigms in those schools,

2. "The invisible colleges", which are much discussed in western literature, are treated by the Soviet authors as a non-objective, amorphous notion, difficult to identify and from which both the composition and boundary of the scientific community are absent. However, their criticism does not take into account the significance of an uninstitutional exchange of ideas, the fact which speaks for their existence.

3. CONCLUSIONS TO BE DRAWN FOR A STUDY OF SCHOOLS IN GEOGRAPHY

The historical-sociological studies of schools in science that have been done so far (mainly in the humanities) demonstrate statements and points of view which are also stimulating for the historians of geography, such as for instance:

1. We find in them a diversity of approaches to scientific schools, both the local ones concerned with secondary problems and the general trends.

2. Scientific schools with their essential elements: master, disciples, and a research method have existed in various forms throughout the history of civilization. They have not been merely communities of "big science". In antiquity Eratosthenes, Aristotle, Ptolemy were masters who had disciples and successors. If in antiquity and the Middle Ages a master, presenting a certain amount of learning, used sometimes to be treated together with his pupils as a sort of sect it was nonetheless a school in accordance with that time and stage in the evolution of the discipline. The schools of modern times, e.g. those of Gdańsk and Toruń, starting with B. Keckermann (1572–1609), had a different range of knowledge and used other methods.

When we look at the facts in the history of geography, in the context of the evolution of science in general, it appears evident that the emergence of schools in geography cannot be restricted only to their institutional and professional development. They did exist—as an accepted model of a school—throughout the history of geography. Indeed the geographical schools—as those in science in general—have been a constant element in the evolution of science, depending closely on the course of that evolution. Once we have adopted this broad approach we may consider two very essential problems:

1. The past and the future of schools in geography. This is a problem of the changing purpose in the geography of particular countries and in geography in general. It is linked methodologically to the next subject:

2. Schools and paradigms. The importance of taking up this subject is evidenced by two works presented at a session of our Working Group in Geneva, 1984: K. Takeuchi, "Languages, Paradigms and Schools in Geography", Tokyo 1984; Geoffrey J. Martin, "Paradigm Change: A Study in the History of Geography in the United States, 1900–1925". The author gives in it an interesting example of a paradigm, different from the Kuhnian model, that is the "geographical cycles" of W. M. Davis. According to it, in geography as a branch of both the humanities and science, models of schools and theories of paradigms cannot be copied.

When we compare the publications of "Les écoles géographiques" with the subsequent literature on the schools in science, we realize how far we are still from an exhaustive study of these problems. It would be therefore most useful to take them up once more, this time as the question: Schools in Geography, Changes of Paradigms.