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EIGHTH INTERNATIONAL CARTOGRAPHIC CONFERENCE

USSR, MOSCOW, AUGUST, 1976

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INFORMATIVE ROLE OF MAP LETTERING

(The National Committee of Cartographers, USSR)

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INFORMATIVE ROLE OF MAP LETTERING.

The interest in studying the semiotic basis of map symbols called the "map language" has increased greatly for the last few years. Lettering of proper names of geographical objects (or geographical names, or toponyms) plays a significant role by denoting an object. They play a signmatic role first of all. They have also a semantic aspect in the object cartographic language.

It was noted that the main function of name lettering in the map language is to denote an object by making use of a rigidly standardized system of different cartographic lettering styles, sizes, and colours; and it is supplemented by the function of data transmission about the object in question: the administrative meaning and size of a place, navigatability of rivers, extension of mountain ranges etc. But it happens that sometimes this additional information appears to be surplus as the lettering type in one way or another duplicates the object characteristic shown by its cartographic sign.

However, it is known that proper names contained in a map are at the same time the words of general language in which they perform both signmatic and semantic function. The function of geographical names from the linguistic point of view is shown in this way: denoting an object is a natural function of any geographical names, but besides denoting an object in many cases it is possible to obtain additional meanings related to the characteristic of an object, its ideology and emotional colour of a name. These views are shared by toponymists-geographers, who believe that geographical names are not only interconnected in space but often show the form of the land,

the way people inhabited a new place, natural resources and other geographical features of a place.

Thus the names of geographical objects are not only signs with the help of which we can distinguish one object from another and therefore, perform only an "address role"- for this purpose it would be enough to use either numbers or any other conventional letter-digital indices (as, for example, they are used in street names in many cities of the USA and other countries). Besides, geographical names are the source of obtaining some information on the object which is represented by the spoken language. This dualism is a specific feature of name lettering, its difference from other geographical signs.

And if proper names of objects are given in maps, used by map users, read by them, and comprehended to a certain degree, it is obvious that comprehension of name semantic is an important means of obtaining additional information on a represented object, although not cartographic in their essence but shown in a map, represented by cartographic means, and in their sigmatic aspect included into the objective language of a map. The task of cartographers is to help map users obtain this information.

To solve this problem is rather difficult as appearance and development of geographical names is due to complicated linguistic, historical, and geographical factors. Information contained in a geographical name, as a rule, is not so easy to comprehend as a toponymic system of any place is formed by different languages and in different ages, and its components are in constant interaction and development. However, achievements of modern theoretical toponymy being especially remarkable in the Soviet Union for the last 10-15 years help to comprehend meanings of a considerable number of names.

Semantic analysis of geographical names of any area requires sys-

tematic approach first of all, that is consideration of names as a whole, taking into account their interconnections, as the analysis of isolated geographical names without taking into account their systems relations does not produce satisfactory results as a rule. Analysis of a system enables an investigator to create a certain conception of the language affiliation of separate geographical names as a part of a system.

Thus, definition (or nondefinition) of the language of a name cannot be regarded the first information output which provides certain historical and geographical data. For example, let the language affiliation of such river names of Central Russia as Klazma, Istra, Oka, Iksa, etc. has not yet been defined, but their very existence proves the existence of a complex ethnic history of this area.

Defining the language affiliation of a name enables us to make structural and grammar analysis, that is to extract its separate elements. For example, in the Slavonic areas, where place names are formed mainly by adding suffixes, such elements will be the stem of names, prefixes, and suffixes followed by grammar flexies. The informative conception of these word building means is rather large though it is not always successive. For example, in the names of Russian towns a widely used suffix is "sk", in the names of rural places the suffixes used are "ov", "in", "ka". But as there exist too many exceptions it is impossible to take this feature as a determinant of this or that type of settlement. Suffix "sk" is used in the names of villages (Zdvinsk, Vadinsk), suffixes "ov", "in", "ka" are sometimes used in the names of towns (Serpuchov, Kolazin, Sludanka). Besides, cartographic representation of a place

and lettering style informs a map user about the type of a settlement with absolute certainty that result in the fact that it becomes unnecessary to use infinite grammar information.

In a number of other toponymic systems geographical names are formed by world compound and usually consist of a geographical term and determination which is in postposition or preposition to it.

In feature names extraction of a generic term has an important practical meaning, as a generic term usually gives an exact characteristic of an object: belok is a mountain with a top covered with snow even in summer, that is "white mountain"; golec is a top which is above the boundary of the forest, that is "bold mountain" etc. However, the availability of shift in meaning giving the possibility to change semantic of one and the same lexema in different dialects in a very wide range up to the opposite meaning, extreme development in dialect lexicology of local terminology not known to the literature language as well as conservatism in geographical names, that is preserving terms of long ago disappeared languages as a component of a name (compare widely used components =oksa, =en'ga, =ochta in river names of Northern Russia :Nenoksa, Kolen'ga, Molochta) often make it understandable to a rather few experts only.

In place names generic terms have not always identical information due to development of an object itself. For example, name Düsseldorf has a generic term "dorf" as the second component, though now it is one of the largest towns of the BRD. Here we have historical information (a town developed from a village) but there is no information about its present state. At the same time, numerous "dorfs" in rural areas correspond to real type of settlements.

Semantic of a stem of geographical name in one case is quite comprehensible (Leningrad, Belgorod, Chibiny, Apatity, Pervomajsk),

but in many cases it is difficult and not clear (Moskva, Volga, Sibir, Kamčatka, Bajkal). Etymologization of similar names conceals unexpected difficulties. Explanation according to the likeness of a name with some appellation though often appearing quite evident, very often turns out to be not correct. It is by this fact that appearing and stable use of so-called "popular etymology" and all forms of simplification is stipulated for. It is known that the name of the river Sestra in no way is connected with the term of relation, as well as Časa river is with the name of timing device, the river Meča with a cold steel, and the village of Volkovo with a well known beast of prey etc. Comprehension of real meanings of these and many other names requires well linguistic efficiency, knowledge of historical and geographical conditions under which the name were formed.

This results in the fact that inspite of availability of more simple cases when geographical name coincide with the name of the object (Dubovaja Rošča, Volgograd, Zapadno-Sibirskaja ravnina etc) it would be very inconsiderate to speak of the names on the whole as of a semantic information source understandable to mass users. It is necessary to add to the aforesaid that the problem of the language barrier which makes it very difficult to get semantic information when using a map of a foreign territory or interpreting geographical names formed from dialects or archaic forms of the language.

All said above result in the opinion that extraction of semantic conception contained in map lettering is a very complicated task and can be made successfully only by the experts. For mass users it should be solved by providing maps with glossaries of widely used generic terms with their translations, by including toponymic maps in atlases or by explanation of the most important names.

Experience gained in this field of science is rather large and diverse. Out of prerevolutionary cartographic works it is necessary to mention some publications by the Caucasus Military Survey Department where glossaries, sometimes multilanguage ones, of the most widely used geographical names were provided for frontier territories and adjoining countries. Thus, in the map of Persia with the adjoining parts of Asian Turkey and Afghanistan, (1886), a glossary of 48 words was provided. These words were used in geographical names of these areas. They were given in the Turkish, Persian, Arabic, and Kurdish languages. In the map of Asia Minor (1916) Russian translation of 48 Turkish generic terms used in the map were given. The translation into Russian of generic terms was provided in a series of other maps of the Caucasus Military Survey Department published at the end of the 19-th and the beginning of the 20-th centuries. It is obvious that these glossaries, though rather limited, made practical use of those maps easier.

It is necessary to mention "Bolshoi vseмирnyj nastolnyj atlas" too (1909) edited by Yu.M. Sokalskiĭ and E.Yu. Petri. The maps of the territories inhabited by not Russian population where special space was provided for glossaries of terms in different languages. Due to this fact the atlas editors found it possible to reject usual so-called "generic terms" placed alongside with the geographical names. The map lettering was as follows: Baba-burun (Turkey), Uleo-joki (Finland), Lac de Nevsatel (Switzerland), and from the glossary it was possible to find out that "burun" means "point", "joki" corresponds to "river", and "lac" is "lake" etc.

Out of the maps published later we shall mention a school wall map of Central Asia for higher educational institutions published in 1954 by the Head Office of Geodesy and Cartography edited by E.M. Murzajev.³² generic terms with their equivalents in the Chinese, Mongolian, Turkic, and Tibet languages are given in this map. Experience gained in using

these maps at higher educational institutions, availability of such a glossary helped students greatly in mastering foreign geographical system which is so difficult to memorize.

Far more extensive terminology glossaries are provided in capital atlases. For example, "Index of geographical names" to the first volume of "Morskoj atlas" contains the glossary of most widely used nautical terms in 25 languages. It has become good tradition to provide capital atlases published by Head Office of Geodesy and Cartography with glossaries of foreign geographical terms and other words widely used in the names. A remarkable fact is that while the first edition of the atlas contained the glossary of about 2,5 thousand generic terms and words in 70 different languages of the world, the second one included about 4 thousand generic terms in more than 100 languages of Soviet nationalities and foreign countries. Such development of glossaries meet the requirement of wide range users who are interested at least in part-by-part translation of foreign names.

Sometimes toponymic etimologies are given in atlases. As an example we can take "Atlas Bajkala", 1969, where three pages out of thirty are dedicated to explanations of geographical names.

Still more effective seems the inclusion of specific toponymic maps into thematic, national, and regional combined atlases. As an example we can mention a beautiful creation of Soviet cartography - historical-biographical atlas dedicated to life and activity of V.I.Lenin. ("Lenin. Istoriko-biografičeskij atlas." M., 1970), which contains "Map-Memorial" showing the location of all the objects named after V.I.Lenin.

From national geographical atlases we shall mention atlas of Romania where out of 320 pages four of them form the section called "Toponymy". Experience of our country as well as that of foreign countries to include toponymic maps into regional combined atlases, into historical, forest and hunting atlases was recently described by us (Pospelov,

1971) and it is not necessary to dwell upon it here.

Thus, experience gained in providing maps and atlases with toponymic information proves convincingly extreme usefulness of all the forms which help users to comprehend semantic meaning of map lettering and the necessity of its further development.

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