

## The Term Cartogram in Phytogeography

Termín kartogram ve fyto geografii

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HENDRYCH R. (1973): The term cartogram in phytogeography. — *Preslia, Praha, 45 : 364—365.*

Attention is drawn to the fact that the current practice of characterizing phytogeographical results of the cartographical character as maps is neither suitable nor correct. In agreement with principles of thematic cartography, which have to be taken into consideration, it is suggested to call, the phytogeographical results of the cartographical character as cartograms or phytocartograms or area cartograms and similar.

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Recently I published a paper dealing with some problems of the use of a map in phytogeography (HENDRYCH 1972). The epistemological and sensualist significance of a map for chorological studies is discussed in it, as well as the causality of both verbal and graphic presentation of geographical distribution, the history and the present state of the use of a map in phytogeography. The degree of qualification of the underlying data, different methods of mapping, "legibility" and "illegibility" of mapping, and type classification of phytochorological works etc. are also considered. The paper is supplemented by a number (66) of explanatory figures.

Apart from the above problems I treated the following question: The phytocartographical treatments, showing in different ways the distribution of a certain species, genus etc., are commonly referred to as maps. In the narrower sense — from the point of cartography — it is mostly not a question of a map. In the underlying models, into which the distributions of plants are mapped, a topographical, i.e. an adequately detailed positional and altitudinal map model is usually missing. "Für die Karte selbst wird im geographischen Sinne Orts- und Flächentreue gefordert. Diese Forderung ist bei manchen thematischen Karten allerdings nur in gewissen Grenzen erfüllbar." (WITT 1970 : 217). However, in most phytochorological maps, this requirement is not met. Moreover, most of them are made upon a model too small a scale to offer more than an approximate accuracy of the place of occurrence. In order to increase the expressiveness of the mapping, the place or even the small area of occurrence is often, if not always, enlarged (whether this is the case of areas or, especially, that of dots). Neither is it possible, for the same reasons, when operating with cartographic models of small and very small areas, where the given model ranges between 1 : 100 thousand and 1 : 500 thousand, to maintain the usual cartographic degree of accuracy with these scales in mapping (localities, distributions). The marked dots or other symbols (or even areas) greatly exceed the proportionality to absolute reality (absolute accuracy) of the localities of occurrence.

In this connection it is sufficient to realize that on map of the scale e.g. 1 : 1 mil. a recorded dot of 1 mm in diameter will have an area of 0,785 mm<sup>2</sup>, which in reality corresponds with an area of 785.000 m<sup>2</sup> (78,5 ha). Nevertheless, in the routine of constructing dot maps (which are relatively the most accurate ones in the given practice) it is often necessary, for the purpose of reproduction at least (reduction for print), to use dots or symbols that are considerably larger.

It is hence evident that the phytochorological treatment are always but a remotely approximate models of reality (not only in this aspect) and therefore it is indisputably more convenient to refer to them as to cartograms of special application — phytocartograms. In the case of mapping a total area (holoarea) or a partial area (subarea) it is possible to term them as area-cartograms or phytoarea-cartograms.

In the phytogeographical literature the notion of cartogram has probably not been used so far. In a number of fields of geography, and especially in the thematic cartography it is perhaps quite common. Although it is a term as early as 100 years ago, its definition is not uniform even in cartography (ARNBERGER 1966 : 68, 72). According to the definition of the International Cartographic Association it means a “Small diagram on the face of map displaying quantitative data; it has also been used to describe an abstracted and simplified map for which the base is not true to scale” (WITT 1970 : 215).

According to WITT (1970 : 216) quoted above it becomes evident from this formulation “dass eine dem Massstab der Kartengrundlage entsprechende Standortgenauigkeit für die Signaturen in Kartogrammen nicht erwarten ist”. This fact is congruent with the great majority of cases of phytochorological maps or map charts leading in some methods of mapping up to geometrized ones.

Other definitions of cartogram differ somewhat from the above. Thus LIODT (1954 : 300) defines it as follows: “Cartogram is a graphic figure in the shape of a map or scheme on which the degree of intensity of some phenomenon is represented by colours or by different thickness of rastering according to individual units of area”. ARNBERGER (1966 : 70) arrives at the definition that “das Kartogramm ist eine kartographische Ausdruckform in welcher auf einer meist vereinfachten topographischen Grundrissdarstellung entweder durch Farb- und Rasterstufenwerte relative Aussage auf einem über das tatsächliche Objektverbreitungsgebiet hinausgehenden Raum bezogen werden oder durch geeignete Figuren und Zeichen Absolutwerte nicht unbedingt legerichtig aber in geographischer Orientierung zum Ausdruck kommen“. These defining statements make it clear that there is no sharp boundary between a map (in the narrower sense of the term) and a cartogram. In all the definitions the notion of quantitative expression is markedly manifest which is obviously due to the fact that the term cartogram originated and was first used as a term for maps giving statistical data. ARNBERGER (1966 : 70) himself points out that it would be false to confine the range of the concept cartogram only to a means of statistical mapping.

## Souhrn

Dosavadní praxe, jednoznačně označovat fytogeografické elaboráty jako mapy, není vhodná. V soulase s principy tematické kartografie je navrženo nazývat fytogeografické elaboráty, zobrazující rozšíření druhů, rodů apod., jako kartogramy, případně jako fyto-kartogramy nebo areálo-kartogramy.

## References

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