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## THEMATIC MAPS AS A PART OF THE GEOGRAPHICAL RESEARCH OF SMALL AREAS

The complex geographical research is at present mostly directed to minor territorial units and an increasing accent is being given to its complementary part — the thematic maps. Any work of this kind is usually accompanied by a set of thematic maps in which a great quantity of processed cartographical information is preserved.

This is mostly due to the fact that this sort of cartographic works is based on the results of geographical research which deals either with a certain region or represents a part of a complex research of the environment or gathers information from the regionalization of certain geographical phenomena and other geographical works. These works analyse, first of all, the individual elements of the natural environment or of the economic factors resulting from man's activity, further they solve the succession of these phenomena in their context and mutual dependence and, finally, they establish complex relationships between natural and economic conditions.

The results achieved by these scientific recognitions may be furthermore expressed and generalized by specific methods of cartographic interpretation, namely in the form of analytic, complex or synthetic thematic maps. All sorts of these maps are usually presented in a wide scale of modifications of the methods of representation either as less or more comprehensive maps or cartograms.

It follows then from what has been said that the thematic maps not only classify and record the location of the phenomena under observation in a certain area, in an absolutely objective way, with the aid of analytic maps, but they also mediate a complex of individual facts and information together with their relationships, either evident or supposed, which are often influenced by subjective opinions, by means of synthetic maps.

Analytic maps have been the most often compiled thematic maps so far. They represent the individual phenomena in a differentiated and isolated form. Their absolute objectivity and simple cartographic capability of expression and reproduction are a positive trait, the negative one being the passing of almost unprocessed pieces of information.

An effort to substitute these elementary analytic maps by polythematic or complex analytic maps has been observed therefore for a long time. The latter maps enable recording of several individually differentiated phenomena either of homogeneous or heterogeneous character. Their elaborating is still purely analytic, attaching thus an additive character to the general perceiving of the map and making the establishment of causality and succession a subjective matter. It cannot be denied that there is a negative trait in maps of this kind, namely worse legibility resulting from the mosaic of descriptive symbols.

Less numerous but most required to date are the synthetic maps, recording the respective elements synthetically and in reciprocal dependence. Thus they are maps with a large quantity of processed information and they exhibit a form advantageous for the expression of various data after their evaluation on a computer. In the opposite case these maps are able to substitute computers, at least partly, if they result from a confrontation and combination of a number of mono- and polythematic analytic maps. All synthetic maps should be preceded by a number of analytic maps or studies and only then is it possible to generalize the observed features in a cartographic synthesis, to focus on dominating and specializing points and to reduce unessential generalities. The selection of elements that are to determine the resultant form of a synthetic map, i. e. the selection of the dominating and integrating factors, should be performed very carefully and it should be remembered that only facts in a conceptional or causal connection can be combined.

If conditions have been likewise established the synthetic map presents a complex of individual facts and recognitions with evident or imaginary relations of mutual dependence. But in it disappear the individual elements that have laid the basis for material correlations and are not apparent in the synthetic expression. The picture of the map no longer presents an objective material condition, but yields a constructed finding in relationship to the object. The synthetic map thus is, first and foremost, the expression of imaginary conditions and where there are no more verifying criteria, subjectivity in the synthesizing aspects may also make itself felt in a considerable manner.

If simplicity, clear arrangement, and processed presentation of cartographic information constitute a positive feature of this type of maps, the impossibility of interpretation of the building elements of the map, not only in quantitative, but also in qualitative respect, besides the earlier mentioned subjectivity, represents a negative trait. The map thus reproduces only the final result of material individualities in the region under study. Yet, the logical justification of the trains of thoughts and all data for the verification of the correctness of the presented results are missing in it. It means, that a certain shortcoming of the cartographical expressing form, which is at a disadvantage over the presentation in text form, manifests itself here.

When processing thematic maps of small areas the fact is advantageous that small territories are concerned for which large-scale maps can be easily compiled, and which can use all before mentioned methods of representation for recording the contents. Large-scale maps enable a detailed recording of all represented features and their cartographic image cannot be thus overfilled even in the case of complex maps. The negative trait of these maps, however, may consist in the fact that large-scale analytic maps recording certain features are often rather insufficiently filled and always lack continuity with wider surroundings.

When representing those features where the above mentioned insufficiency could make itself felt monothematic analytic maps should be preferably substituted by polythematic maps or a cartographic representation of these phenomena should be even abandoned.

Analytic and complex maps should accompany any partial theme of a regional study, synthetic maps, on the other hand, complex processing of the individual sectors and they should also form an integral part of the final evaluation.

As synthetic maps cannot, unfortunately, interpret constructive elements determining the synthesis, we propose to add to these maps the dominating elements which condition the resulting character of the map. The sufficiently

large scale of these maps enables that purely synthetic maps can be completed by expressive features of analytic maps. This should concern those phenomena which determine the resulting form of the map. In accordance with the designation in usage, we combine a complex and a synthetic map into one unit. A complementation of synthetic maps can be performed just to a certain extent, as their good arrangement and further applicability must not be thus affected.

If there is a sufficient quantity of data for the area in question available in the work, which would express the line of evolution for the individual features or for whole sections, it is preferred to complete at least some analytic, complex or synthetic maps by dynamic maps which could enable in their following cartographical processing, based on a prolonged (supposed) line of development, a construction of prognosis maps which are often required nowadays.

In the graphic treatment of polythematic, complex, synthetic, and complex-synthetic maps it is often necessary to use complicated cartographic expressing forms, i. e. more methods, of representation mutually overlapping. The more signature layers overlap (the more contoured the map is), the more laborious and time-consuming is the train of thoughts of the reader of the map, but much more difficult is the task for the author or the editor of the map who determined the structure and the combination of the individual means of representation. In a single thematic map it is very often necessary to use all the known representation possibilities, with their suitable and suggestive combinations, to reach the desired effect. Thus the construction of a well-balanced thematic map is quite a difficult task and such map should result from the collaboration of a cartographer and a specialist who studies the problems of the phenomenon in question. The demand made upon the cartographic execution of these maps, with regard to their profitability, should be directly proportionate to the time of their validity and number of users.

Sets of these maps represent a certain transition between thematic atlases of major regional units (states, countries, units of planification, etc.) and atlases of towns. Thematic atlases of countries and towns have reached a high standard in the last years, from both the viewpoint of the contents and that of the way of expression. It is then necessary that more attention be paid to thematic maps of the regional studies in question, both as theory and practice are concerned. There are more reasons for it. First, these maps should reach the standard of the above mentioned atlases by their processing and execution, further, by the way of their presentation they should be comprehensive and intelligible, for it is a well-known fact that the map often gives a much easier and more truthful information to its user than a text covering many pages.

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## TEMATICKÉ MAPY JAKO SOUČÁST GEOGRAFICKÉHO VÝZKUMU MALÝCH OBLASTÍ

Komplexní geografický výzkum je dnes ponejvíce zaměřen na menší územní celky a jeho nedílnou část tvoří tematické mapy. Ty jsou depozitem velkého množství zpracovaných informací, vyplývajících z výsledků geografického výzkumu.

Dosažené výsledky tohoto vědeckého poznání bývají pak zveřejňovány specifickými metodami kartografické interpretace, a to formou analytických, komplexních nebo syntetických tematických map. Soubor těchto map podává buď jednotlivě nebo ve skupinách roztržiděné sledované jevy, pomocí analytických map, nebo zprostředkuje pomocí map syntetických souhrn jednotlivých skutečností a poznání se zjevnými nebo předpokládanými vztahy.

Dosud nejpracovanějšími a nejužívanějšími tematickými mapami jsou mapy analytické, méně se však vyskytují, ale jsou více požadované, mapy syntetické. Mapy syntetické jsou konstruovány na základě velkého množství zpracovaných informací a jsou výhodnou vyjadřovací formou pro údaje vyhodnocené samočinnými počítači, v opačném případě, vznikají-li z konfrontace a kombinace mono- a polytematických analytických map, mohou alespoň částečně nahradit činnost těchto strojů. Nedostatkem tohoto druhu map je však nemožnost interpretace stavebních prvků mapy, a to nejen v kvantitativních údajích, ale i v kvalitě.

Při zpracování tematických map malých oblastí je výhodou ona skutečnost, že se jedná o malá území, pro které není obtížné vyhotovovat mapy ve velkém měřítku s možností využití všech uvedených znázorňovacích způsobů. U map velkého měřítku je možný detailní záznam všech zobrazovaných jevů, a to bez obav přeplnění mapy. Je tedy výhodnější nahradit monotematické mapy polytematickými, syntetické mapy pak rozšířit o dominantní prvky, které podmiňují výsledný ráz mapy.

Jsou-li pro studovanou oblast dostupny údaje, které by vystihovaly vývojovou řadu, pak je vhodné doplnit nejzávažnější tematické mapy dynamickými mapami, které v následném kartografickém zpracování, při prodloužení předpokládané vývojové řady, by umožnily konstrukci prognózních map.

Počet map pro danou studii a jejich vybavenost musí zcela odpovídat době užitečnosti tohoto díla a počtu uživatelů. Avšak i za tohoto předpokladu je nutné, aby tematickým mapám zmíněných regionálních oblastí se věnovala po stránce teoretické i praktické větší pozornost. Jednak, aby se alespoň částečně vyrovnaly svým zpracováním a provedením atlasům větších regionálních celků, jednak, aby svým podáním byly věcné a srozumitelné, neboť často i jednoduchá mapa uživatele výstižněji informuje než mnohostránkový text.