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From The Class Performing An Analysis For Methodological Variations In The Generation Of Cartography

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ABSTRACT.

The work presented in this occasion, corresponds to a class idea, in which it is intended to make an analysis of the cartographic information that is related to the geographical names that have been collected in the field and according to these methodological variations, as well as the data, it is intended to make a methodological proposal based on the application of methods of social cartography. The development of the idea is based on the importance for students of cadastral engineering and geodesy that field work is fundamental for the elaboration of cartography, given that through several decades the technological advance has allowed the process destined to the elaboration of maps to be more optimal in the office, in such a way that the collection of data in the field continues to be a fundamental factor for the use and application of new technologies in the case of processing the new information obtained in such a way that it has the adequate solidity to generate a final cartographic product with high quality standards.

Keywords: cartographic information, social cartography,cartographic product,geographical names

I. INTRODUCTION

Geographic space has always been a substantial element in covering the needs of human beings, from its beginnings in nomadism itself, the purpose of recognizing the area in which it was immersed, to the condition of deciding which would be the best territory for its establishment and giving birth to agriculture; thus, it constitutes a need and obligation to have an appreciation of its surroundings in an objective and planned way.

Since man has transformed his space in various ways, the need also arises to transform the impression he has of the place where his activities take place. All this condition gives way to capture these perceptions of the environment, initially with basic

and obviously relative information, from here arises the need to unify reasoning, judgments and start using toponymy, symbology and elements that turn points, lines and polygons into what today we define as cartography.

In the relationship between geographic space and man, the discrepancies between social groups are born, evidently manifested in characteristics such as economy, culture, history that in a social way and in addition to physical aspects of the occupied site, as well as the environment, such as relief, topography and climate; are factors that influence the creation of a social identification between the collectivities of a site that we call in order township, village, municipality, department, country.

In the present and taking into account that Colombia is a supremely dynamic country, seen from the cultural aspects as well as the socio-economic ones, and in greater proportion the to-pography with incidence on the previous components, it is had that the collectivities change their needs, seen from the work realized by the consultation of the students and the summary of their discussions give step to present: that also the perspective of its surroundings and although history has relevance, also the progress of the thoughts induce that the linguistics of the zone itself is transformed giving origin to new cultural and social dynamics, which are determinant for the presentation of the elaboration of renewed cartography in all the elements that compose it.

II. HISTORICAL REVIEW AND BACKGROUND

The intensive consultation and revision and progress of the work in the class advisories, the students pre-sent a summary of their ideas obtained in their meetings and group discussions, which are grouped in the following idea: The inquiry for the complementation of the studies elaborated in the matter of geographical names and their respective standardization has allowed them to be oriented to rea-lize a deep field exploration of the roots that admit the recognition and the principles of many of the names and toponyms that demarcate the culture and ancestrality of the populations and human settlements.

This is a task that is widespread in the world and is a fundamental part of the cartographic process and allows the creation of a sketch of spatiality, the way of perceiving the world and the exploration of a community. It can be said that for many centuries it has been a transcendent and fundamental task for man to provide designations to his environment in a way that allows him to establish a concrete location and to be able to have a referent by a specific name.

Since prehistoric times, when man lived in caves, we have the sketches found in them, which possibly symbolized their environment, and later engraved on other elements such as wood, animal skin; and in the situation when the language was established as a fundamental statement of communication, it becomes important for communities to name the sites where the first populations are established and nomadism is left aside

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language was established as a fundamental statement of communication, it became important for the communities to name the sites where the first populations were established and nomadism was left aside so that sedentism could give way to the recognition of the environment where the roots of what would later be called societies would take root.

Since the time of the Babylonians in 2300 B.C., the first approaches to the construction of maps were made. C, the first approaches to the construction of maps were made, which mostly consisted of the measurement of a portion of land in order to collect taxes, this has allowed us to have, that this culture is also a development on the representation of the first world map accredited and made on a clay tablet in which is the description of the land divided by the Tigris and Euphrates rivers, there are also mentioned some metropolis; Therefore, since this period there is evidence of the importance of making reference to the places known by the societies to name them later geographic names.

The consultations made by the students allow to establish that in Europe, after a medieval stagnation where the cartographic elaboration is based on symbolism since in this period, the medieval man knew neither to read nor to write the displacement of his village is rare, the transcendental thing in the time was the salvation for which the cartography was based on the representation of the sky and the hell; Related to this, the Arab sailors made multiple navigation charts with great precision, thanks to the commercial dealings with Europe from the thirteenth century, the consultation of some history books, highlight the Arab cartographer Al-Idrisi, who advanced on the nautical charts for Spain and Portugal, leaving aside the theological thinking and financing the work of navigators, where the portulan charts are created, which are the nautical charts that had its heyday until the seventeenth century.

III. PRESENTATION OF CARTOGRAPHIC METHODOLOGIES

Since there are several meanings on the definition of cartography, for the purpose of studying the evolution of cartographic methodologies, this is the one that comes closest to what we are trying to learn. According to Erwin Raisz.

"Cartography is the science of collecting and analyzing data measurements and regions of the earth to represent them graphically with different types of geometry." this definition, although in a modern environment it can be said that it is the platform for the elaboration of maps.

For example, it can be said that cadastral mapping was born in ancient Egypt, since it is known that the Nile River flooded during this period, and therefore the marks that

defined the boundaries or limits of the properties were erased; due to this situation it was necessary to delimit the territory.

With designs that although a little rudimentary allowed that for the time the objective for which the space was represented was achieved. advancing in the time, the European world began to explore other lands through the use of navigation, the first intercontinental maps were drawn, this is how these representations of the terrain were elaborated with a different purpose which was conceived.

Figure 1. Chorographic chart of the State of Cauca. Constructed with the data of the Comisión Corográfica i de orden del GobiernoGeneral by Manuel Ponce de León, Engineer and Manuel María Paz. Bogotá, 1864.

With the planning of maritime routes, which would allow in the following years, the production of maps with a smaller scale each time. In the time of ancient Greece other

important elements are already introduced, such as cartographic projections and as evidenced in the first known world atlas, which used a conic projection; which was developed by Claudius Ptolemy of Alexandria (90-160 AD) and the calculation of the radius of the earth of Eratosthenes.

It is fundamental that in the formation of students of cadastral engineering and geodesy it is necessary to teach cartography as a basic input for the knowledge and planning of the territory.

Since these professionals are the ones called to perform these important tasks for the study and generation of new products that allow statisticians to make important decisions on the knowledge of the territory according to the graphical representation that they have.

Figure 2.The world of Ptolemy according to Agathodemon. Probable copy of the 13th century

The knowledge that has been extracted from the bibliographic consultations, estimates that the antiquity of these charts is close to the XIII century. By the XV to XVII centuries, with the establishment of Renaissance thought, all the advances that were somehow truncated in the period we call the Middle Ages are given, in this way instruments are created that allow the capture of geographic data efficiently; together the states are committed to funding expeditions that allow the development of the new cartography that is more accurate and large scale.

An important advance in this period is the World Map of the Minor atlas of Ge-rardus Mercator, which uses for the first time the cylindrical projection, which in the 20th century gave way to the UTM (Universal Transverse Mercator) projection, a projection that is effectively used worldwide.

At the time of the development of the Second World War, it is established that it is necessary to have a global cartography, for which it is necessary to homogenize a cartographic projection, which is the one mentioned above.

The development, orientation and exposition of the class work, takes us to the 60's, time for which begins the development of the first GIS geographic information systems, which will allow the cartographic production to be applied to multiple disciplines of human knowledge. Thus, Canada is the pioneer in GIS advancement, due to the need to carry out an appropriate management of natural resources, specifically to determine the amount of trees to be cut, in the same way the United States of America, in the decade of the 80's decided to make the world atlas with an accuracy of 1 kilometer, implementing innovative techniques to obtain such maps.

It is vital to inspect that one of the stages in the elaboration of cartography is the collection of geographic names and for this reason it is significant to make an approach to toponymy in general and on this occasion in Colombia, as well as its evolution in the country in the process that is carried out for its attainment, such as field classification.

IV. ON GEOGRAPHICAL NAMES IN THE DEVELOPMENT OF THE JOB

A geographical name is the proper name given to features on the surface of the earth or toponym. In general terms, a geographical name can be defined as a word or expression that designates a place, natural or artificial feature or region with a recognizable and locatable identity on the surface of the earth. Such entities can be named as: natural geographic features, artificial geographic features, undemarcated places or areas, populated places.

The presentation developed leads to show some geographical names such as:

- Hydronym: The toponym applied to a hydrographic feature.
- Alonym: Each of the geographical names used to refer to the same topographic feature.
- Choronym: Toponym applied to a surface feature.
- Endonym: Name of a geographical feature in one of the dialects used in the region where the feature is located.
- Eponym: Name of one or more persons that give rise to a toponym.
- Epotoponym: That which is a toponym that is a base toponym of a common name.
- Oronym: It is the toponym applied to an orographic feature, such as mountains, mountain ranges.
- Odonym: It is the proper name of an access road to a town.
- Exonym: Proper name in its written form to designate a geographic feature that is located outside the area where that language has official character.

According to the above description, one type of toponym is the gentilion that is defined by that which is derived from the endonym by which a population is known.

V. PRESENTATION OF THE HISTORICAL REVIEW FOR THE WORK

Finding that the origin of toponymy can be traced back to the very awakening of humanity, it can be quickly verified that its evolution through time and history, until reaching the evolution in our country. The assignment of names to each region, begins at a cultural level in the country, when the artistic expressions in the ancient cities of the country began, due to a need that is generated to facilitate an explanation to the origin of some sites to distinguish them from the rest. Later in the 19th century in Europe, toponymy was born as a discipline, as a resource of history in the occupation of space.

In this way, the proper names of an area show all the elements that make up a population, such as flora, fauna, historical geographic features, delimit historical patterns, from the indigenous heritage to the process of colonization and land use, so that everything is a summary of customs, mentality and cultural heritage that is manifested in the toponymic compendium of a site or a region.

VI.THE IMPORTANCE OF GEOGRAPHIC CONCEPTS

A Geodata or Geodata is a graphic representation of a segment of a geographic fact, from which are selected the characteristics that under the premise that it is a real phenomenon is represented from the spatial, temporal, thematic and quality point of view.

- Spatial Component: refers to the precise geographic location of the data elements, defined by a coordinate system.
- Quality Component: refers to the treatment of data according to the technology used, it is necessary to evaluate all activities and errors that may arise from inadequate handling of the information, which may occur initially when the data is processed.
- Attribute component: refers to the description of the characteristics of the geographic data to which it refers, such as: area, perimeter, position, among others.
- Temporal Component: refers to the date of the data. This component is more difficult to define, given that, although the intention is to have a homogeneous set of data in all its components, it is complicated to obtain the information and incorporate it into the GIS on the same dates and at the same time from one activity to another.
- Spatial Component: oriented to the precise geographic location of the data elements, it is defined by a coordinate system.

VII. SPATIAL DATABASES

Databases store geographic information in all its components and establish the relationships that exist between the same data that form it, its foundation is a data model that approves the abstraction of reality to the representation through objects

that through geometry and through symbols and maps reproduce the geographic information that give correspondence to the abstracted reality initially.

VIII. TYPES OF MAPS

Base maps are those that will allow its use for different purposes, such maps are those prepared in order to represent the geography of a given territory, usually contain a high precision and the use of inputs that allow the generation of graphical outputs with a high solidity and veracity of information.

Thematic maps are those that allow the localization of a specific phenomenon where several layers of information can be shown and interrelated among them. They can have different levels of measurement that can be classified as: nominal, ordinal, interval or relation; those that have to do with quantitative information, operations of relation, interpolation, statistical management and linear data are performed.

In the beginning, two types of maps were conceived, base maps and thematic maps. With the advance of cartography, other types of maps have been created to achieve different objectives in addition to the geographic one.

IX. SPATIAL ANALYSIS

Spatial analysis is the conjugation of techniques that seek to separate, process, classify and present with cartographic criteria the quantitative and qualitative study of those phenomena that manifest themselves in space and are the object of study. In accordance with the above, spatial analysis is important to study the correlations of the elements in space, optimizing their location and helping to make correct decisions.

X. ELABORATION OF A CLASS PROPOSAL ON THE METHODOLOGY FOR FIELD CLASSIFICATION ON TOPOGRAPHIC MAPS USING PARTICIPATORY MAPPING TECHNIQUES, SPATIAL ANALYSIS, SUPPORTED BY SIG TOOLS, STATISTICS AND SPATIAL ECONOMETRICS

Colombia is a nation with a diversity of topography, culture, landscapes that correspond to heterogeneous features for which it is not possible to make a characteristic generalization of all territories, in addition to possessing a great linguistic wealth in terms of geographical names that date back to pre-Hispanic times and that delimit the birth and consolidation of Colombian culture; this is how social mapping is a powerful tool for a process of collective knowledge construction through the implementation of qualitative instruments that allow obtaining a consistent and accurate product.

Brazil, for example, has an example of how to carry out this type of activity, with extensive experience since the 1990s, where projects focus on gathering information

with indigenous communities and defining reserves for sustainable use. In Honduras, social mapping processes were carried out to defend the ancestral rights of indigenous communities. Most of the projects using participatory mapping have focused on eco-systemic indicators and are focused on recognizing the needs of indigenous communities or communities that extract products from their environment, and to a lesser extent, peasant communities.

- The methodology proposed for social cartography as a tool for the elaboration of the country's official cartography should be based on some important guidelines so that the products derived from the work are in accordance with the quality standards established by the IGAC, and the methodological steps are described below.

- Criteria for selection of the study area: Exact zones must be established, either on the scale of the villages or of the watersheds, which are often where the population centers or the highest population density are located. In other words, to develop a project in post-conflict zones, the population density and settlement time must be studied in order to define the area of influence to be covered by the project.

- Implementation of primary data collection methodologies: Since most of the information collected is qualitative in nature and corresponds to the social perspective of the populations, it is necessary to develop a registration system with a defined categorization that allows for the specialization of the data after the work is done. This can be done by dividing the study area by zones that have common characteristics, such as the division of villages, population centers, resource extraction zones, watersheds, among others, and files will be created for each of the zones and data on the physical-biotic characterization, cultural, social, economic and political aspects will be recorded.

XI. CONCLUSIONS AND RECOMMENDATIONS

An important conclusion of the work is that it is RELEVANT to the evidence of the field classification processes for the capture of geographical names; which in past decades had an arduous work due to the scarcity of access roads, the conditions in which the work had to be developed, an important factor to take into account are the security conditions, the lack of state support and other variables that despite being so decisive were not an impediment for the work to be carried out fully and that the technicians were people committed to the work entrusted to the updating and incorporation of names that demarcate the culture and idiosyncrasy of a region.

This is how these guidelines have been maintained in order to continue, despite technological and communication advances, that the most important thing is the contact with the communities to know their perception and vision of the environment where they live.

A methodological proposal is then presented for the generation of cartography that should be carried out with the communities, so that maps can be generated with their perspectives that reflect the lived reality, the present and the prospective future; therefore, thematic maps of the current state are generated.

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