REVISITING A NATIONAL CARTOGRAPHIC PROJECT. THE PLACE NAMES FROM THE 'PLAN DIRECTOR DE TRAGERE' MAP SERIES (1916–1959)

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The 'Plan Director de Tragere' of the Army Geographic Service was the first large-scale national map collection covering all Romanian regions and also the first in the country's history to use a uniform projection system. Although the maps were initially graphically copied from earlier sources, they were continuously updated after 1921. The maps were used until 1959, when they were replaced by Soviet-inspired cartographic works based on the Gauss-Krüger coordinate system. The maps clearly had a military function, yet their rich content could be a valuable resource for the historical-geographical reconstruction of the natural and cultural landscape.
However, the 'Plan Director de Tragere' collection is proving particularly difficult to use due to its lengthy production, as its editions vary widely in style and content. As a result of the initiative of a geo-spatial.org project named *eHarta* to digitally preserve and share old cartographic material, many map sheets from different editions have been scanned, georeferenced, and made available via the web, increasing the general interest in the collection. A highlight of the 'Plan Director de Tragere' are the place names, for which the cartographers, officers of the Romanian Army, received specific instructions on how to collect and display them on the maps.
The present study aims to investigate the possibility of a systematic indexing of the "Plan Director de Tragere" as a resource for toponymic research. It draws new conclusions from previous projects that have used the maps and will highlight the problems that should be considered when turning to the collection as reference material. In addition, the article will also address the still unresolved issue of using the maps as a basis for a strongly needed Romanian digital gazetteer.

Keywords: Plan Director de Tragere, historical maps, Romania, gazetteer, place names.

In the mid-19th century, after the unification of the principalities of Moldova and Wallachia, the newly formed nation-state did not dispose of a map of its own. The reliance on Austrian and Russian map series, which were perceived as rather cursory and often inaccurate, was considered a deficiency that needed to be thoroughly remedied.[1] Although the country was amid a period of great social, economic and cultural transitions, the knowledge of its own territory was, still quite deficient.

The establishment of the General Staff of the Romanian Army in 1859 raised for the first time the issue of conducting systematic topographic, geodetic and statistical work and their application to the production of a national cadastral map.[2]

[1] G.G. Pârjolescu, *Din istoricul hărților Principatelor și harta României*, București, 1908, p. 23.
[2] The idea of a cadastral map both for military and civilian needs did not arise at that time.

However, it was not until the establishment of the Scientific War Depot in 1870 that the work really took off. The first office, later transformed into a department, was named *Map of Romania – Surveying and Cartographic Works*. The Ministry of War appointed Colonel Constantin Barozzi as the head of the Depot, and in 1873 he began the survey work for the production of the first national topographic map of Romania based on a unified concept.[3] The project commenced in northern Moldavia, but work was halted three years later, in 1876, due to the Russo-Turkish War of 1877–1878. In its aftermath, the surveyors decided to resume their work in the newly won province of Dobrudja (1880–1884). Meanwhile, the Scientific War Depot was renamed and designated as *The Third Department* of the General Staff of the Army. So it continued the surveying work in Moldavia (1884–1894) and in Muntenia (1894–1899), from east to west, up to the meridian that passed through the town of Zimnicea.[4] In 1895, a new law on the General Staff lead to the creation of the Military Geographical Institute.[5] However, its first Director, Brigadier General Constantin Brătianu, recognizing the need to rework the existing map, initiated work on a second geodetic concept, which was based on new methods and tools. Besides many technical issues that needed to be addressed, a different projection system was chosen and it was decided that the 1:20,000 scale reference map would be used to create smaller map series (1:50,000, 1:100,000, 1:200,000).[6]

The cartographic materials produced in this period constituted a real novelty for Romanian mapmaking, yet there was an obvious lack of uniformity between the outcomes of the two geodetic concepts and their outputs.

Romania's participation in the First World War entailed an important shift in the work of the Geographical Service of the Army. The Service was requested to produce maps that were not only up-to-date, but could also be used by the artillery units, which were becoming more and more important. This prompted, starting from 1916, a new conceptual change of the whole project, advocated by the representative of the French mission that supported the Romanian Geographical Service, André-Louis Cholesky. In this way, the map known as 'Plan Director de Tragere' was born,[7] which was to become an important milestone in Romanian cartography.

THE 'PLAN DIRECTOR DE TRAGERE' MAP COLLECTION

The basic map 'Plan Director de Tragere' of the Geographical Service of the Army was printed at a scale of 1:20,000. With the help of Cholesky, a standard

[3] M. Rotaru, Gh. Anculete, I. Paraschiva, *Evoluția concepției geodezice militare în România*, București, 1989, passim.

[4] G. Iannescu, "Conspect asupra lucrărilor Institutului Geografic al Armatei", *Buletinul Societății Geografice Române* XXIX, 1908, 1, p. 1–24.

[5] In the period from 1895 to 1950, the institution had two different names – Military Geographical Institute (1895–1910, 1930–1950) and Army Geographical Service (1910–1930).

[6] M. Rotaru, Gh. Anculete, I. Paraschiva, *Evoluția concepției geodezice…* , p. 92.

[7] 'Direct Firing Map', as translated by the Library of Congress – Geography and Map Division, *Acquisitions*, Library of Congress, Washington, 1983, p. 27.

cartographic projection was used for the first time by employing a Lambertian conical grid based on the Clarke ellipsoid.[8] The 'Plan Director de Tragere' thus became the first Romanian cartographic work in which the entire territory of the country could be represented with a uniform projection system. Unlike all its predecessors, the project was surprisingly long-lived. Although it went through many changes, both technical and aesthetic, some of which were apparent and others subtler, the maps were produced almost continuously from 1916 to 1959.

Although the base map was printed in only a few colors, it contains a large number of features – inhabited places, roads and railroads, land use and production, boundaries, and many other details including hills, enclosures, cottages, mills, and telegraph lines (Fig. 1). But even for the untrained map reader, the place names are the most striking feature of the 'Plan Director de Tragere'. Their number is both inspiring and intimidating, especially when compared to more recent maps, which contain so few names as if entire regions were true *no-man's land*.

However, the 'Plan Director de Tragere' was by no means an entirely new map. For most of the territories that belonged to the Old Kingdom, the work was based on older cartographic material drawn up during the field surveys carried out between 1880 and 1907 at a scale of 1:20,000. In the eastern part of Moldavia (Bessarabia), the map was based on the Russian 1:42,000 topographic map, and in Transylvania, Banat and Bukovina, on the Austrian 1:25,000 map.[9] Starting in 1921, the Army Geographic Service strove to conduct new surveys to update the sheets copied from foreign maps. On the other hand, attempts were also made to improve the general map layout by expanding the color palette and by modifying the symbols and labels. While these amendments provided the much-desired unification of the series, they also led to a growing number of map editions. Tellingly, none of these editions managed to cover the entire territory of Romania. A major problem was the pace at which new sheets were produced and made available, which was simply too slow to match all the changes that were taking place in the country. The lack of an adequate, up-to-date map of the country was soon criticized by many geographers, who found the 'Plan Director de Tragere' not reliable enough and called for an urgent update.[10] However, there was no significant improvement. After 1948, the new political regime recognized the need to introduce a new and modern projection system in Romania, nevertheless, during the extensive surveys that began in 1951, various editions of the old sheets continued to be reprinted with minimal changes, even though most of the information they contained had long since become obsolete. Gradually, their content and accuracy no longer satisfied military requirements, and their printing

[8] A conformal projection preserves the angles and ensures the correct relative local directions at any point. The Lambert projection was developed by the Swiss polymath Johann Heinrich Lambert and presented in 1772, but was hardly used until the first half of the twentieth century.

[9] I. Pavelescu, *Topografia. Studiul terenului – citirea hărților și planurilor directoare*, București, 1924.

[10] V. Tufescu, "Inactualitatea hărții noastre topografice", *Arhivele Basarabiei* 4, 1932, 1, p. 47–50.

and distribution was finally halted in 1959, shortly before the appearance of the new generation of Gauss-Krüger topographic maps.[11]

In 2010, the geo-spatial.org community[12] began a crowdsourced project called *eHarta*[13] to document and georeference a large portion of the 'Plan Director de Tragere' collection.[14] The project was successful and in 2011 the maps were published as a raster mosaic through a web interface and also made available through geo-spatial.org's Web Map Server (WMS).[15] The accessibility of the maps to both Geographic Information Systems[16] professionals and map aficionados sparked a great deal of interest in historical cartography and in using the 'Plan Director de Tragere' in various fields of scientific research, including archaeology,[17] architecture, and urban history.[18] The project was also used as an optional base map in the cartographic web interface of the National Cultural Heritage.[19] However, one of the most important but mostly overlooked achievements of the project was that eHarta initiated a referential framework for the study of the maps themselves. Viewed as a mosaic, the Plan Director de Tragere collection appears so heterogeneous that it reaches a point where it seems like a pure puzzle of different maps (Fig. 2). Beyond aesthetics, however, there are some methodological questions that must be addressed first before using the map collection as a database for a gazetteer research.

The missing sheets. The maps scanned as part of the *eHarta* project do not cover the whole country. There are many missing sheets, especially in the area of the Southern Carpathians and in the lands that after the Second World War no longer belonged to Romania. Some of these sheets have been identified in recent years in a previously unknown archive at the Faculty of Geography in Bucharest, but the sheets remain to be added to the digital collection. Filling in the remaining gaps is turning out to be an extremely difficult, if not impossible, task, when one considers that there were doubts that these maps had actually been produced.

[11] V. Crăciunescu, I. Rus, Șt. Constantinescu, I. Ovejanu, Zs. Bartos-Elekes, *Master Shooting Plans*, 2011, accessible online on www.geo-spatial.org.

[12] A community-driven project founded in Bucharest in 2007 that operates as a platform for the exchange of geo-knowledge and geodata. The official website is https://geo-spatial.org.

[13] V. Crăciunescu, Șt. Constantinescu, I. Ovejanu, I. Rus, "Project eHarta: a collaborative initiative to digitally preserve and freely share old cartographic documents in Romania", *e-Perimetron* 4, 2011, 4, p. 261–269.

[14] The majority of the maps originate from the collections of the Faculties of Geography in Cluj and Bucharest.

[15] A Web Map Server (WMS) is a standard protocol developed by the Open Geospatial Consortium for serving georeferenced image files over the Internet. Its specifications can be accessed at: https://www.ogc.org/standards/wms

[16] A Geographic Information System (GIS) is a computer system used to capture, store, analyse and visualize geographical data. GIS has become widely used to study and extract information from historical maps.

[17] V. Diaconu, "Toponimele „cetățuia" și „cetate" din zona Neamțului – confirmări și infirmări ale prezenței unor situri arheologice", *Revista de Arheologie, Antropologie și Studii Interdisciplinare* 1, 2019, 1, p. 85–104.

[18] T.O. Gheorghiu, «Sisteme de organizare a centrelor urbane din Țara Românească în raport cu traficul zonal – secolul al XIX-lea», *Historia Urbana* 27, 2019, p. 225–258.

[19] Accessible online on https://map.cimec.ro/Mapserver/index.html.

The substantial number of editions of the maps. From 1916 to 1959, the 'Plan Director de Tragere' underwent numerous redesigns, which led to a large number of editions, sometimes even printed simultaneously. While new sheets were produced mainly due to new surveys or further revisions, some reprints did not show any changes. As it is quite difficult to see whether an issue follows a certain spatial pattern, an overall survey of the collection remains unfeasible to this day. Due to the lack of possibility to compile a homogeneous mosaic based on one or two editions, the geo-spatial.org initiative had to compromise methodologically in order to produce a unified dataset that can be shared via standard web services and thus be accessible by the largest possible number of users.

The accuracy of the maps. In order to obtain all potential benefits from the maps in any type of manual or automatic feature extraction, the scanned images had to be accurately georeferenced. Although the entire processing procedure was greatly simplified by the use of GDAL,[20] the results varied considerably from region to region in terms of accuracy. The reasons for these variations are manifold – errors in crowdsourcing the coordinate pairs used as ground control points, minor inconsistencies in the parameters of the projection transformation and in the original projection system of the maps themselves, and the poor condition or the quality of the paper onto which the maps were printed. Since the original scans were also made available, users could download and georeference the sheets themselves.

Lastly, there is the issue of the place names, which is of particular interest to this study. Although the project attracted much attention among local historians and map aficionados, especially after the sheets became accessible online, it went almost completely unnoticed by scholars interested in toponymy, linguists or geographers alike. In fact, the General Survey Instructions written for the officers of the Army Geographical Service included an extensive section devoted to place names. The instructions emphasized the responsibility of the surveyors to thoroughly research and record place names during their fieldwork and also provided some guidelines for their recording onto the maps.[21] Considering the numerous references that demonstrate the obvious effort to accurately record place names, both in the field and in the recorder's office, an important question arises. There is still no definitive answer to this question, which has long preoccupied Romanian geographers and historians. Could the 'Plan Director de Tragere' series be used as a basis for the construction of a national gazetteer? The next section of this study addresses this question and searches for a minimal general methodological framework that could be used to build a digital gazetteer using historical maps.

[20] The Geospatial Data Abstraction Library (GDAL) is an extensive open-source library that contains utilities and tools for the analysis of geographic data formats (https://gdal.org).

[21] I. Pavelescu, *Harta României – instrucțiuni provizorii asupra lucrărilor de topografie*, București, 1910, p. 176–183.

EARLIER UTILIZATION OF THE MAP COLLECTION

Despite the difficulty of using the map collection available through *eHarta* for any kind of large-scale project, in 2016 a group of five enthusiastic students from the Faculty of Geography in Bucharest embarked on an ambitious project reminiscent of early historical research in the field of Geographic Information Systems (GIS). Using standard desktop GIS software, the team wanted to compile a dataset of all the settlements that appear on all the sheets of the 'Plan Director de Tragere' collection. Little can be said about the workflow, as it was largely a simple on-screen digitization on a sheet-by-sheet basis assigned to each of the five members. Somewhat unexpectedly, however, the team chose to digitize polygons for the built-up areas of the settlements as the main dataset and extract their centroids to provide an additional point layer. The two resulting datasets were uploaded to geo-spatial.org, but went largely unnoticed. The students were heavily criticized for failing to address any of the issues described in the previous section, thus producing rather incomplete and highly unreliable datasets. Nevertheless, in addition to the problems already noted, the team's notes reveal other difficulties encountered in working with the maps that had previously been completely overlooked.

One major and rather unexpected deficiency was the illegibility of numerous place names. For example, the 'Plan Director de Tragere' showing the area around the village of Broasca in the Buzău Valley is not physically damaged or incomplete, yet it is quite difficult for any human eye to read all the names correctly without a solid knowledge of the region (Fig. 3). Many sheets from the 1950s, mostly copies of older sheets, have similar problems due to poor print quality on thin acidic paper.

Even if the maps are legible, the question remains about the real significance of the various place names. A thorough study of an appropriate edition of the Atlas of Conventional Signs should probably eliminate this problem.[22] However, the atlas does not explain the symbols or names taken from foreign maps, especially those sheets relating to Transylvania and the Banat. For example, near the SW of Hațeg (Hunedoara County), along the old road leading to the town, there are two small captions near what appear to be small groups of houses – Martin and Kukuk (Fig. 4).

The map sheet, although printed a few years after the dissolution of the Austro-Hungarian Empire, is an almost an identical copy of an Austrian map at a similar scale of the Third Military Survey (1869–1887).[23] The use of such editions therefore requires a good knowledge of the source material, since the cartographic tradition is often much older than the date of printing (and may even have been obsolete at the time of the original map production).

[22] Serviciul Geografic al Armatei, *Noul atlas al semnelor convenționale. Ridicările topografice și lucrările cartografice ale României*, București 1921.

[23] L. Zentai, G. Gercsák, "Cross-border topographic mapping, cross-border orienteering: the Hungarian overview", *International Journal of Cartography* 5, 2019, 2–3, p. 255–268.

PLACE NAME CHANGES

About shortly after the Great Union of 1918, the Romanian authorities determined to change the "foreign" place names of many settlements, particularly from Transylvania and Dobrudja. This was intended to adjust the toponymy in order to adequately reflect the cultural identity of the new Romanian Kingdom.[24] The Military Geographical Institute quickly updated the maps and even conducted a field study in 1932 dedicated exclusively to the changes of the place names.

Nevertheless, a comparison of the same sheets, taken from different editions, can sometimes bring to light unexpected changes in place names, apart from those regulated by law. For example, west of Doblea, an isolated village from Argeș County, at the intersection of two local roads stood a cross named *Crucea Iorgăi (Iorga Cross)*, according to the 1930 edition of the 'Plan Director de Tragere' (Fig. 5). Most likely, Iorga was the name of its founder, and as with numerous other wooden or stone crosses in Wallachia, its location made it a useful landmark when navigating by map. This seemingly insignificant detail was slightly changed in the 1957 edition, with the application of the new Soviet-inspired conventional symbols. Crucea Iorgăi now became *grădina Iorgăi (Iorga's garden)*, although the symbol for a wayside cross remained in the same place.[25] The 1957 edition offers no clues how and when the small toponym was changed. Instead, it brings to our attention another hitherto unforeseen obstacle in the construction of a gazetteer. There could very well be numerous other place names that have been changed from one edition to another with no one noticing.

MINOR SETTLEMENTS

In numerous cases, the bases for a gazetteer are the names of what some technical guides call "inhabited places",[26] a generic term employed for all types of settlements. However, there are numerous examples, on a large number of sheets from different editions, of problems that can be encountered when using the maps to gazette place names.

The 4353 Cătina sheet, printed in 1952, which replicates an earlier edition without significant changes, features the settlements on the upper *Muscel Creek*, a small tributary of the Buzău in the Subcarpathian area. During the period when the field recordings were conducted (1890–1895), official administrative handbooks

[24] C. Brătescu, "Noile numiri de sate din Dobrogea Veche", *Analele Dobrogei* V–VI, 1924–1925, p. 193–202.

[25] On more recent topographic maps, the place name has been completely removed.

[26] Ordnance Survey, *OS Open Names – technical specification*, version 2.1, 2019, online at www.ordnancesurvey.co.uk; the term is also widely used in the GeoNames gazetteer – online at www.geonames.org.

confirm the existence of several villages belonging to the rural commune of *Valea Muscelului*: *Brusturișu*, *Calea Chiojdului*, *Mihăilești*, *Malu Alb*, *Măceșu*, *Manolești*, *Poiana* and *Muscelu*, which constituted the seat.

Out of all these villages, the map names only *Muscelu* and *Valea Muscelului*, without clarifying that the latter actually refers to the name of the whole commune (Fig. 6). It is rather surprising that all the other settlements, although clearly indicated at house level, were not mentioned at all on the map. Moreover, during a recently conducted field research[27], the inhabitants also revealed that they do not regard *Muscel* as a separate settlement, but as a group of somewhat scattered hamlets – *Cătunul Bisericii* (also known as *Manolești*), *Drăgulinești* and *Gârla*.[28] Also the village of *Poiana*, which is SSE of the church of *Muscel*, includes the hamlet of *Pâcle*, whose name also does not appear on the map. Some of these small hamlets, such as *Drăgulinești, Gârla* and *Pâcle,* have never been officially recognised as separate settlements, although their specific identity is still apparent to locals today.

It appears that the smaller settlements, in particular those that did not have official administrative status, were systematically missed by the older surveys upon which the 'Plan Director de Tragere' was based. A thorough examination of other sheets, however, shows that this was not in fact the case. On the margin of the Mehedinți district, on the right bank of the *Motru River*, lies a village called *Buicești* (Fig. 7). The 1908 administrative law mentions a second *Buicești* that is part of a neighbouring rural commune, though it is nowhere to be found on the map. Instead, the map features in brackets four smaller place names – *Peret*, *Ciuculani*, *Mitulani* and *Mango*, which refer to the four hamlets that have never made an appearance in the official administrative documents.[29]

Lastly, the toponymy used on these maps should be taken with a grain of salt. Ion Conea voiced a sensible warning to all those who rely solely on maps when studying place names, contending that many maps were "toponymic graveyards" because they were rife with errors and misspellings that would easily mislead the uninitiated reader.[30] Conea's remark came as a direct critique directed at those Romanian historians and linguists who practised toponymy without field research experience and sound geographical knowledge. Conea's admonishing words are by no means exaggerated. If a scholar could still judge the accuracy of toponymy relatively easily during a local study, this is hardly possible for a larger project.

[27] Conducted in July, 2019.

[28] These settlements were recently studied by D. Turnock and N. Muică, "Settlement and Toponomy in the Pătârlagele Depression: the Muscel and Viei valleys", *Geographica Timisiensis* 18, 2009, no. 1–2, p. 121–148.

[29] Mitulani is mentioned as part of Buicești in a botanical paper – I. Costache, "Floristic contributions", *Buletinul Grădinii Botanice Iași* 16, 2006, p. 63.

[30] * * *, *Clopotiva: un sat din Hațeg – monografie sociologică întocmită de Echipa Regală Studențească 19/935 sub conducerea lui Ion Conea*. Institutul de Științe Sociale al României, București 1940, vol. I, p. 122.

THE CREATION OF A DIGITAL GAZETTEER BASED ON THE 'PLAN DIRECTOR DE TRAGERE' COLLECTION

Gazetteers are structured inventories of geographical names that are essential tools for matching texts to spaces and places. In recent years, interest in (digital) gazetteers has increased, and their compilation is considered a central task of the Geohumanities today.[31] The primary reason for the increased interest lies in the fact that gazetteers fulfil an important function in geographically enabled information management systems.[32] They are excellent connectors between the geographic web and the much broader web of information, links and data of all kinds.[33] Given their increasing relevance, several standards for digital gazetteers have been developed that attempt to consider many of the technical issues involved, such as classifications and ontology creation and interoperability, to name but a few.[34] According to the Alexandria Digital Library (ADL) standard, a minimal gazetteer requires three core components: a name, a classification or feature type, and a spatial footprint.[35] Gazetteers and services based on gazetteers can be used in many different fields, such as cultural history, heritage conservation, public health, urban and rural planning, and digital libraries. Numerous gazetteers, created long before the digital age, have become authoritative name sources that provided the framework for regional and national toponymic guidelines.[36]

Gazetteers are not a new subject matter in Romanian geography. To the contrary, they seem to have been one of the major scientific endeavours of the discipline since its first ventures into the academic world. One of the first undertakings of the Romanian Geographical Society, even prior to the proclamation of the Kingdom (1881), was a very audacious one: to compile a National Geographical Dictionary. Following several unsuccessful approaches, mostly caused by shaky methodological approaches, the monumental work was eventually completed. Its result was the five volumes published between 1898 and 1902, as a collation of 32 smaller gazetteers, with one for each 'județ' (district). While the *Great*

[31] *Geohumanities* is a generic term that refers to a variety of scholarly works and research projects at the intersection of geography and humanities disciplines (M. Dear, J. Ketchum, S. Luria, D. Richardson (eds) *GeoHumanities. Art, history, text at the edge of place*, London 2011). For recent perspectives on toponymy as a topic in geohumanities see: M.L. Berman, R. Mostern, H. Southall (eds), *Placing Names. Enriching and Integrating Gazetteers*, Bloomington, 2016.

[32] E. Acheson, S. De Sabbata, R. S. Purves, "A quantitative analysis of global gazetteers: Patterns of coverage for common feature types", *Computers, Environment and Urban Systems* 64, 2017, p. 309–320.

[33] H. Southall, R. Mostern, M. L. Berman, "On historical gazetteers", *International Journal of Humanities and Arts Computing* 5, 2011, no. 2, p. 127–145.

[34] M.F. Goodchild, L.L. Hill, "Introduction to digital gazetteer research", *International Journal of Geographical Information Science* 22, no. 10, 2008, p. 1039–1044.

[35] L.L. Hill, "Core Elements of Digital Gazetteers: Placenames, Categories, and Footprints", *Research and advanced technology for digital libraries*, 2000, p. 280–290. A legacy webpage of the ADL project can still be browsed at http://legacy.alexandria.ucsb.edu/

[36] Many of these national guidelines are available online on the website of the *United Nations Group of Experts on Geographical Names* – https://unstats.un.org/unsd/ungegn/

Geographical Dictionary of Romania [Marele Dicționar Geografic al României], as it was referred to, had quickly become a landmark of Romanian culture, it was not long before scholars noticed what they called *compositional shortcomings*. As a matter of fact, the Society's failure to provide a uniform schedule of work, together with the rather superficial and haphazard approaches of several of the 32 Gazetteers, which were mostly compiled by passionate amateurs, produced an enormous number of errors that eventually raised suspicions about the work as a whole. Realising that *The Great Geographical Dictionary* failed to fulfil its primary function of being a national gazetteer, a group of historians and geographers raised the question whether it could be replaced through another undertaking that might be more consistent and based on a sounder methodological approach,[37] but it eventually never came to be published.

Finally, one of the main reasons that impeded the production of gazetteers in Romania was the lack of a consistent standardisation of place names. Notwithstanding the numerous orthographic revisions of the Romanian language and the efforts of linguists on the one hand,[38] and the often-laborious scholarship and fieldwork of geographers on the other,[39] the two groups of scholars hardly cooperated.[40] Consequently, the inventories of place names compiled by the linguists were usually inaccurate and halting, while those compiled by the geographers were inconsistent regarding classification and spelling.[41] Yet it is surprising that both have equally and almost exclusively focused on printing voluminous works, often in multiple volumes, while completely dismissing the possibility for developing some kind of digital gazetteer.

In the same way, there is the conspicuous problem of a decidedly mismatch between place names and their cartographic application, which is quite disturbing when one considers that many gazetteers were, and still are, by-products of mapmaking. The collection of place names for the map of one's country was perceived as a responsible task and sometimes inspired valuable contributions towards the knowledge of toponymy.[42] Despite this, few cartographic works today are based on new toponymic surveys, as most cartographers tacitly copy place names found on earlier, though not very old, maps, still willing to change some of them but without adhering to any definite sets of rules.[43]

[37] A.O., "Pentru un nou dicționar geographic", *Arhivele Olteniei* XIII, 1934, 74–76, p. 257–266.

[38] Th. Capidan, "Numele geografice din România și Dicționarul Toponimic Român", *Analele Academiei Române. Memoriile Secțiunii Literare*, Series III, XV, 1946, p. 35–76.

[39] I. Conea, Dr. Bugă, "Familia termenilor geografici din limba poporului român cu semnificația „un loc adînc într-o apă curgătoare" ", *Studii și cercetări de Geologie-Geofizică-Geografie, seria Geografie* XVII, 1971, no. 1, p. 91–97.

[40] Gh. Dragu, "Toponimia (știința numelor geografice) și interdisciplinaritatea", *Buletinul Societății de Științe Geografice* VII (LXXVII), 1984, p. 221–224.

[41] V. Șerban, "Unele aspecte ale ortografierii toponimicelor romînești", *Limba Romînă* XI, 1962, 5, p. 568–573.

[42] I. Conea, "Toponimia în harta țării", *Geopolitica și Geoistoria* III, 1944, 1, p. 112–121.

[43] The problem of multiple names for the same geographical feature is still of topical interest, as discussed by M. Buza, "Standardizarea denumirilor geografice din România – stabilirea unor norme de scriere corectă a denumirilor geografice", *Studii și cercetări de geografie* XLII, 1995, p. 101–106.

The youngest work published by geographers, and courageously translated into English as the *Gazetteer of Romania* (two volumes, 2008–2009), strove to follow all the recommendations of the United Nations Group of Experts on Geographical Names, and followed the very latest norms of Romanian orthography.[44] Its reviewers were very favourable and ranked the Gazetteer alongside *The Great Geographical Dictionary* in the group of notable reference works.[45] Notwithstanding the affirmative reviews, however, the project is not all that impressive. All the 40,000 or more place names it contains were compiled exclusively from the last major Romanian topographical map series, which suffers from a considerable number of serious errors, such as misspellings, confused names and toponyms of questionable authenticity. A more comprehensive but still untrustworthy version of the same collection, built on the same methodology and containing some 94,000 entries, has been published as Romania's official dataset for the Geographic Names theme on the European Union's INSPIRE Geoportal.[46] Regardless of this somewhat failed attempt, there are quite a few successful gazetteer projects in Europe that could be inspiring for a committed Romanian venture.

A contemporary gazetteer initiative of particular methodological weight that has attracted the attention of many scholars and enthusiasts is GB1900, a collaborative project between the University of Portsmouth, the National Library of Scotland and three Welsh institutions. Designed as an extension of the earlier Cymru1900 project, this project used crowdsourcing to transfer all place names from the Ordnance Survey 6-inch to the mile (1:10,560) County Series topographic maps.[47] The project team has published two papers discussing the contribution of user involvement to the success[48] of the project and the evaluation of the resulting gazetteer.[49] Apart from the technical aspects of developing the actual web application and selecting the database, the project was based entirely on a series of maps that is considered to be an excellent record of geographical features for the entire Great Britain.

Most interestingly, the 'Plan Director de Tragere' series bears many similarities to these British maps, however by now it should be obvious that the collection in its current state is not suitable for the development of a gazetteer. Its

[44] M. Buza, "Repertoriul denumirilor geografice standardizate din România (Gazetteer of Romania)", *Comunicări de Geografie* II, 1998, p. 144–147.

[45] I.S. Jucu, "Gazetteer of Romania Volume II M-Z – book review", *Review of Historical Geography and Toponomastics* IV, 2009, 7–8, p. 161–162.

[46] The dataset can be downloaded free of charge from https://inspire-geoportal.ec.europa.eu/ and browsed using standard Geographic Information Systems software packages.

[47] The original surveys were made between 1842–1893, the mapping was revised between 1888–1914, and updated, mainly in urban areas, until the 1940s.

[48] H. Southall, P. Aucott, C. Fleet, T. Pert, M. Stoner, "GB1900: Engaging the public in very large-scale gazetteer construction from the Ordnance Survey "County series" 1: 10,560 mapping of Great Britain", *Journal of Map & Geography Libraries* 13, 2017, 1, p. 7–28.

[49] P. Aucott, H. Southall, "Locating past places in Britain: Creating and Evaluating the GB1900 Gazetteer", *International Journal of Humanities and Arts Computing* 13, 2019, 1–2, p. 69–94.

incompleteness, the large number of undocumented editions and the plethora of sometimes inaccurate or outdated sources on which the sheets were based are all important drawbacks that need to be considered when devising a gazetteer methodology.

CONCLUSIONS

This paper has outlined that digital gazetteers have provided a new way of representing our geographical knowledge and linking it to many other types of semantically organised content. As a result, the priority of scholars should shift from printing traditional gazetteers to developing digital gazetteers, extracting place names from crowd-sourced resources. However, while other European countries are striving to create better gazetteers, Romania itself lacks an elementary gazetteer. The lack of a suitable methodology for standardising place names, recognised and used by both linguists and geographers, has long hindered the development of gazetteers. Further scholarly investment in large printed reference works has also been unhelpful, to a lesser extent due to the format itself, but rather to a mostly flawed methodology used for the collection and localisation of place names. We explored a different approach, looking at one of the most comprehensive Romanian map series, the 'Plan Director de Tragere', known for the large number and accuracy of place names it contains.

Spurred on by the relative success of a geo-spatial.org project to georeference and publish online a large part of the collection, the possibility of using the 'Plan Director de Tragere' collection to build a Romanian digital national gazetteer was explored. From today's perspective, we unfortunately have to conclude that this map series, although a great achievement of Romanian cartography, is not yet suitable for the creation of a gazetteer. The collection is incomplete, the number of editions is overwhelming, and the maps were based on a large number of outdated sources, which were also not always reliable. There are considerable differences even between adjacent sheets of the same edition, especially with regard to missing place names or, on the contrary, toponyms that are included on maps but are not supported by any other written or cartographic source. Prior to any further consideration of the use of the maps, the entire collection of the 'Plan Director de Tragere' must be restored and thoroughly documented in order to assess the various map editions and to trace the toponymic selections made by the cartographers.

Nevertheless, the sorting of the maps does not necessarily mean that we are ready to move forward. Ultimately, just because a Romanian gazetteer does not yet exist is not a sufficient reason to create one. The past precedents of flawed Gazetteers should serve as a warning. Moreover, to serve its purpose, the longed-for gazetteer should meet the requirements of potential users, something we have not even begun to think about.

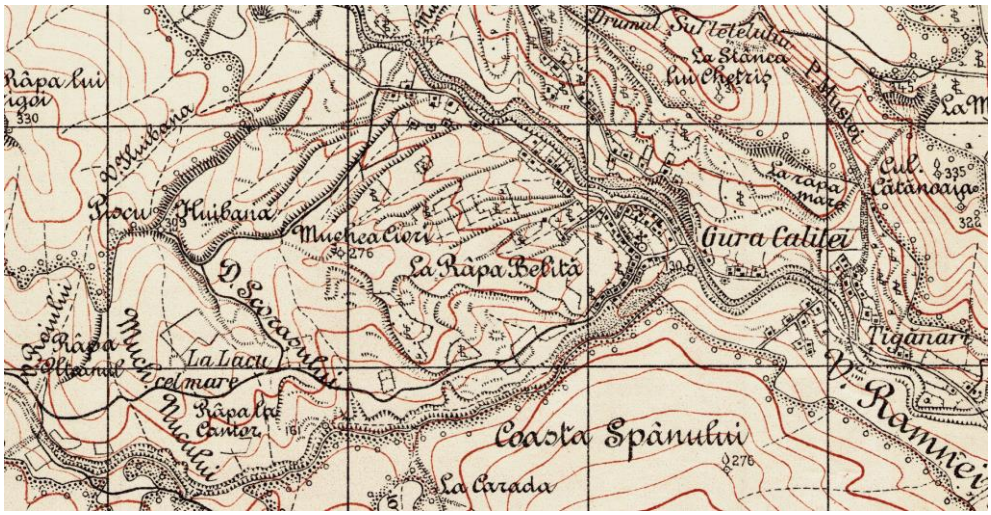

Fig. 1. Gura Caliței on the Râmna valley (Râmnicu Sărat District); excerpt from the 'Plan Director de Tragere' 4756 – Plăinești, 1:20,000, the 1940 edition.

Fig. 2. The 'Plan Director de Tragere' mosaic featured in the *eHarta* web interface; Source: www.geo-spatial.org/harti.

Fig. 3. Broasca village and its surroundings (Buzău District); detail from the 'Plan Director de Tragere' 4355 – Gura Siriului, 1:20,000, the 1953 edition.

Fig. 4. Area SW of Hațeg town (Hunedoara District); details from the 'Plan Director de Tragere' 2656 – Hațeg, 1:20,000, the 1940 edition (left) and the Third Military Survey of Austria-Hungary, sheet 5770/2, unknown edition, scale 1:25,000 (right).

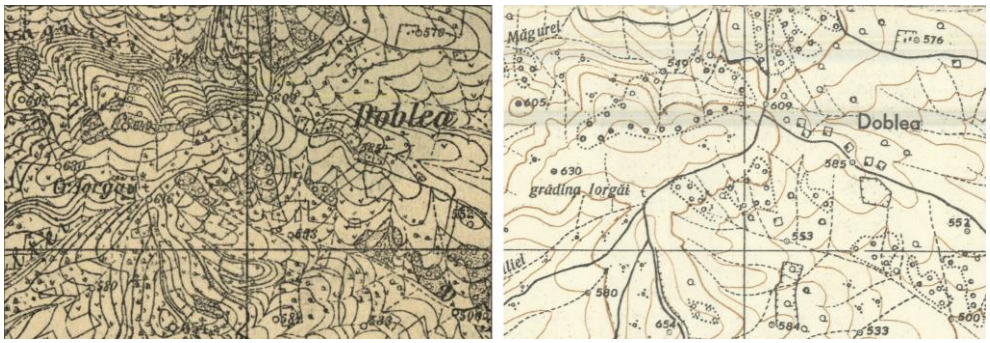

Fig. 5. Doblea village (Argeș District) and its western surroundings; details from 'Plan Director de Tragere' 3552 – Cerbureni, scale 1:20,000, the 1930 edition (left) and the 1957 one (right).

Fig. 6. The settlements from the upper Muscel valley (Buzău District); detail from 'Plan Director de Tragere' 4353 – Cătina, scale 1:20,000 – Note the rough marks that reveal the extent of the older topographic map sheets.

Fig. 7. Buicești (Mehedinți District); detail from 'Plan Director de Tragere' 2845 – Butoești, scale 1:20,000, surveys from 1912 to 1923, printed in 1951.