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Murguía-Romero, Miguel; Ortiz, Enrique; Serrano-Estrada, Bernardo; Villaseñor, José Luis

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Main collectors of Mexico's vascular plants: a catalogue built from online databases

Principales colectores de las plantas vasculares de México: un catálogo a partir de las bases de datos en línea

Miguel Murguía-Romero ^a, Enrique Ortiz ^a, Bernardo Serrano-Estrada ^b, José Luis Villaseñor ^{a, *}

^a Universidad Nacional Autónoma de México, Instituto de Biología, Departamento de Botánica, Circuito exterior s/n., Ciudad Universitaria, Coyoacán, 04510 Ciudad de México, Mexico

^b SERES Sistemas Especializados, Membrillos Mz. 120 Lt. 38. Col. Ojo de Agua, Tecámac, 55770 Estado de México, Mexico

*Corresponding author: vrios@ib.unam.mx (J.L. Villaseñor)

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Abstract

Databases of biological collections contain fundamental information for the study of biodiversity, hence the importance of their quality, which includes the data on collectors. For this purpose, a list of the main vascular plant collectors in Mexico was constructed to improve the quality of this information. A total of 3.7 million records of vascular plant specimens collected in Mexico were analyzed from the National System of Biodiversity Information (Sistema Nacional de Información sobre Biodiversidad; SNIB) of the Mexican National Commission for the Knowledge and Use of Biodiversity (Comisión Nacional para el Conocimiento y Uso de la Biodiversidad de México; Conabio) and the database of the National Herbarium of Mexico (Herbario Nacional de México; MEXU) of the Institute of Biology at the National Autonomous University of Mexico (UNAM). A “main collector” was considered anyone with 500 or more unique collection numbers in the database. A total of 610 main collectors were identified, who together contributed 83% of the records of vascular plants collected in Mexico, and a standardized list of their names is presented. The list of names of main collectors of vascular plants in Mexico is a useful tool for the cleaning and extraction of information from biodiversity databases.

Keywords: Biological collections; Biodiversity informatics; Collecting effort; Data cleaning; Floristics

Resumen

Las bases de datos de colecciones biológicas contienen información fundamental para el estudio de la biodiversidad, de allí la importancia de su calidad, entre ella los datos sobre los colectores. Con este fin se propuso construir una lista de los colectores principales de plantas vasculares de México que contribuya a elevar la calidad de esta información. Se analizaron 3.7 millones de registros de ejemplares de plantas vasculares recolectados en México, disponibles en el

Sistema Nacional de Información sobre Biodiversidad (SNIB) de la Comisión Nacional para el Conocimiento y Uso de la Biodiversidad de México (Conabio) y la base de datos del Herbario Nacional de México (MEXU) del Instituto de Biología, Universidad Nacional Autónoma de México (UNAM). Se consideró como “colector principal” aquel que en la base de datos registra 500 o más números de recolecta únicos. Se identificó un total de 610 colectores principales que realizaron 83% de las recolectas de plantas vasculares de México y se presenta una lista estandarizada de sus nombres. La lista de nombres de los colectores principales de plantas vasculares de México es una herramienta útil en la limpieza y extracción de información de las bases de datos sobre biodiversidad.

Palabras clave: Colecciones biológicas; Informática de la biodiversidad; Esfuerzo de colecta; Limpieza de datos; Florística

Introduction

In economics, capital is the collection of goods that is calculated by summing the contributions of all the people involved (members of a business partnership, family, etc.). In nature, natural capital is the body of natural resources (for example, plants and animals), that on one hand can generate some benefit for humanity, but also maintains harmony among the services provided in an ecosystem (for example, oxygen generation, pollination, erosion prevention, etc.).

Goods, in economics and in ecology (the set of properties, wealth, or resources that belong to a person or group) must be known (inventoried) to accurately determine the amount of capital. In botany, the activity that helps determine the natural capital of a country, state, or region is herborization; that is, the act of traveling around a natural space and collecting samples (specimens), which after a meticulous formal process, are incorporated into scientific collections known as herbaria. The specimens resulting from herborization and maintained in herbaria constitute the primary materials for plant systematics (Sánchez-González & González-Ledesma, 2007). They are used by taxonomists to make observations and measurements that, once analyzed, generate the academic products of this line of research (floristic inventories, floras, monographs, taxonomic revisions, phytogeographic analyses, etc.).

The collection of botanical specimens is an ancient activity, dating to long before the existence of herbaria as we currently know them. In fact, the concept of “herbarium” alludes to a kind of book illustrating plants, particularly medicinal plants. Currently, an herbarium is a collection of dried, pressed plants that are stored in a collection that follows a particular arrangement based on a classification system (Lot & Chiang, 1986). The specimens stored in herbaria are collected in the field by a wide variety of people, including professional collectors that make their living from the sale and profits of their collections, botanists that study a plant group to understand its diversity, geographic distribution, and evolution, or that

are interested in inventorying the floristic richness of a region, and amateurs who are interested in knowing the plants around them. Not all collectors contribute equally to the enrichment of a collection; there are some collectors, mainly those employed by or associated with herbaria, that have made particularly important contributions to the accumulation of specimens protected in the collection. For example, the National Herbarium of Mexico (Herbario Nacional de México; MEXU) at the Institute of Biology of the National Autonomous University of Mexico (Instituto de Biología, Universidad Nacional Autónoma de México), houses just over 1.5 million mounted specimens that are accessible for consultation, generated by the effort of slightly over 7,000 people, each of whom collected somewhere between 1 and over 30,000 specimens.

There have been several attempts to document the people involved in the effort to better characterize the floristic richness of Mexico. Perhaps the most important was the account of Mexico’s botanical collectors done by Knobloch (1983), which reports the existence of about 3,472 collectors. This author highlights the difficulty of generating a total count of collectors, since people interested in collecting are constantly incorporated, which leads to an ever-growing accumulation of names. At the same time, information should be collected from herbaria all over the world, since many of them have records of some collecting activity done in Mexico, such that some names may be omitted.

Another important contribution to the knowledge of the botanical collectors in Mexico is that of Rzedowski et al. (2009), who after an exhaustive bibliographic review of the history of botanical collection in Mexico and of the lives and works of many important collectors in Mexico, synthesized the knowledge on the principal botanical collectors through the 1930’s. The authors compiled the intense activity of about 540 collectors but reduced their study to describe more deeply 332 of them, whose contributions they considered merited a more detailed account of their biography and history.

In a more regional context, Martínez and Hernández (1993) compiled a list of the collectors who contributed to the floristic knowledge of Tamaulipas, identifying the participation of approximately 150 botanists. For his part, Rzedowski (1997) analyzed those that had participated in the floristic knowledge of the Bajío Region and neighboring areas (Guanajuato, Querétaro, and northern Michoacán), reporting the contribution of some 420 botanists, considering 67 of them as the most important.

Bibliographic review does not document additional works on the botanists that have done exploration and collection work in the country. Notwithstanding, there are important contributions that address this activity in several of them. The works mentioned above (particularly Rzedowski et al., 2009) contain references to this literature, citing, for example the biographies of prominent botanists such as C. G. Pringle (Davis, 1936), E. Palmer (McVaugh, 1956) or the 3 generations of Hinton (Hinton et al., 2019). Similarly, the majority of the “Listados florísticos de México” (Floristic listings of Mexico), published by the Institute of Biology, UNAM, briefly recount the collectors involved in each listing (<http://www.ibiologia.unam.mx/BIBLIO68/fulltext/listflor.html>).

Currently, identifying the collectors that have contributed to collections in a country is particularly relevant, given that much information about biodiversity is stored in digital databases. It is important to stress that the information available can present problems due to a lack of standardization of fields such as collector, among others. Another problem that frequently occurs in the collector field is that the whole group of collectors is recorded, which makes it more difficult to organize and search information. This lack of tidiness in the data decreases the efficiency of the use of databases, hence the importance of creating catalogues that facilitate data cleaning.

The creation of catalogues that allow the normalization of the information contained within them is fundamental and led to the proposal of the following questions for this work: 1) How many and which collectors are documented as having carried out collecting activities in Mexico? 2) How many of them are prominent based on their large number of collections? 3) In which regions of the country have these prominent collectors (hereafter, “main collectors”) carried out their activities? Answering these questions will surely improve the quality and precision of the information in the digitalized biodiversity databases, which will facilitate their use and analysis to address other, more specific questions about the floristic diversity of Mexico and its patterns of distribution. As such, the focal objective of this work was to generate a list of the main collectors of vascular plants in Mexico associated with 4 additional dimensions of information; once the number

of main collectors was determined, their participation is analyzed by state, by the core period of their collections, the herbarium that houses most of their collections, and their taxonomic knowledge and expertise (family with the highest number of collections).

Materials and methods

To compile the list of collectors, we analyzed just over 5 million records of botanical specimens available from 2 digital information sources on the flora of Mexico. The first was the National Biodiversity Information System (SNIB in Spanish, “Sistema Nacional de Información sobre Biodiversidad”) run by the Mexican National Commission for the Knowledge and Use of Biodiversity (Conabio in Spanish, “Comisión Nacional para el Conocimiento y Uso de la Biodiversidad”, Conabio, 2020). The other source was the digital repository of the National Herbarium of Mexico (Herbario Nacional de México; MEXU-UNIBIO, currently available through the IBdata online platform: www.ibdata.abaco2.org of the Institute of Biology, UNAM).

We did a preliminary evaluation to eliminate records that did not pertain to vascular plants (eliminating, for example, algae, bryophytes, and lichens), as well as records from the “Naturalista” platform that indicated “observed in the field” in the “sample source” field. Thus, the working database from which we obtained the names of collectors in Mexico was ultimately composed of 3,704,664 records (Table 1). Based on the “Collector Name” field in the database, the first collector’s name listed was identified. The Ibero-American names were separated into paternal surname, maternal surname, and name(s). In the case of Anglo-Saxon names, they were separated into last name, and given name (including first and middle names). We supplemented this list with a (non-exhaustive) search of additional sources, consulting floristic lists and inventories as well as the Index of Botanists of the Harvard University Herbarium (https://kiki.huh.harvard.edu/databases/botanist_index.html) and the Global Plants catalogue in JSTOR (<https://plants.jstor.org/>). Once we had processed approximately 89% of the records, we did a non-exhaustive cleaning of the collection number for each record, separating its information into 3 new fields: prefix, number, and suffix. For example, the collection number ‘Breedlove 31727A’ was separated into prefix = ‘Breedlove’, number = 31727, and suffix = A. The records were then grouped by the number and suffix fields to identify duplicates. The records were counted for each collector and related to 4 values (information dimensions): state, collection year, collection in which the sample is housed, and taxonomic family. The families

of the vascular plants follow the criteria of Villaseñor (2016) with the modification that all families of ferns were grouped together under 'Ferns', so that a larger number of collectors could reach the value used as a cutoff (100 records per family).

We defined a "main collector" as any collector that had 500 or more unique specimen records in the database (eliminating duplicates, considering unique "Collector"- "Collection number" values). We consider that a collector with this number of collections has been actively involved in the collection process, whether as a student involved in a floristic inventory or some other type of botanical project, or a collector associated with an institution. The list of collectors was associated with 4 dimensions of information: 1) state, 2) herbarium or scientific collection, 3) collection year, and 4) taxonomic families.

We quantified the number of collectors per biome based on the geographic coordinates of the records when available and superimposed them on a digital map based on the criteria of Villaseñor and Ortiz (2014). "Aquatic vegetation" was added as a sixth biome to the 5 biomes reported in that work. We also identified the collectors that are authors of published vascular plants names according to Villaseñor et al. (2008).

The sum of the number of records attributed to each collector in the database was smaller than the total number of specimens deposited in the biological collections, mainly because not all the specimens deposited in the collections have been digitalized and because our process of identifying the collectors in the database was not exhaustive. As such, the cutoff of 500 specimen records in the database to consider a person a main collector is an arbitrary criterion. Similarly, the limit of specimen records used to generate the listings of states, sampling periods, biological collections, and families into which the collectors' records were mainly grouped was a similarly arbitrary limit, whose only aim was that the associated lists be informative and useful for future floristic and taxonomic studies of the Mexican flora.

Homonymy Index. We generated a "homonymy index" to estimate the number of incorrectly assigned records. In the process of homogenizing the names of collectors, deciding among homonyms was a common issue; for example, if a record contains as the collector's name "Martínez, E.", was the specimen collected by "Esteban Manuel Martínez Salas" or by "Enrique Martínez Ojeda"? Thus, for each collector, we counted the number of pairs of records with the same collection number but different collection years. Each pair of records detected in this way indicates a potential inconsistency, of which one of the possible causes is that they belong to different collectors. Therefore, an index that represents the proportion of

records that are inconsistent in the fields "Collection number"- "Collection year", was calculated as: *Homonymy index* = $I_h = R_{inc} / R_{col}$, where R_{inc} is the number of pairs of inconsistent records and R_{col} is the number of records attributed to the collector. Let the next 12 pairs of year-collection number: (1999,1), (1999,2), (1999,3), (2000,3), (2000,4), (2000,5), (2000,6), (2001,6), (2001,7), (2002,8), (2003,9), (2003,10) each one corresponding to a record in the database assigned to a particular collector. There are 10 (R_{col}) unique collection numbers (1-10) and 2 pairs of records (R_{inc}) with the same collector number (3 and 6) but different year, so the homonymy index (I_h) for such collector can be calculated as $2/10 = 20\%$.

On one hand, this index allowed us to evaluate whether the set of records was correctly assigned to each collector; a value of $I_h < 5\%$ was considered to represent acceptable quality for the elimination of inconsistencies in the information. On the other hand, the index facilitated the data cleaning process; for example, evaluating the change in the index before and after joining records of 2 collector names that were suspected to be homonyms. If upon joining the sets of records the index exceeded 5%, the names were proposed to be homonyms.

An example of how I_h was applied was between the collector names of 2 people (last names, given names): *Miranda, A.* and *Miranda Moreno, Andrés Gelacio*. "Miranda, A." had an I_h value of 0.010, and "Miranda Moreno, Andrés Gelacio" had an I_h value of 0.007. Combining these 2 names under the assumption that they were a single collector increased the I_h value to 0.299. Given that this value was above 0.05, we decided to keep the names separate, supporting the hypothesis of homonymy.

In another case, the I_h values provided evidence of homonymy among the following collector names: Castillo C., G. ($I_h = 0.005$), Castillo, G. ($I_h = 0.001$), and Castillo Campos, Gonzalo ($I_h = 0.007$). When these names were combined, considering them to represent a single person, the I_h value was 0.019, below the 0.05 cutoff value, so we decided to reject the hypothesis of homonymy and consider all 3 names' variations of the same collector.

We also analyzed the participation of the collectors in the generation of floristic knowledge at both the biome level and the most important families in their collection efforts. Finally, we introduce an online application to facilitate searches of the main results obtained.

Results

Scientific collections with records of vascular plants of the Mexican flora. The source databases on the vascular plants of Mexico analyzed in this work included a little

over 3.7 million records (Table 1). The records were from 375 collections, both within and outside of Mexico. Table 2 shows the collections that contained more than 20,000 records in the database (herbaria abbreviations are according to Thiers, 2016). The most important was MEXU, with 3 times more records than the other collections of Mexican plants. In second place was the collection effort by the Mexican government, through the National Forest and Soil Inventory (Inventario Nacional Forestal y de Suelos), which is carried out to better document the plant diversity of the country's forests. Much of that material is deposited in MEXU. In third place was the herbarium of the Missouri Botanical Garden (MO), which in collaboration with MEXU and the Royal Botanic Gardens at Kew (K) published a large inventory of Mesoamerican flora. It is important to note that of the 22 scientific collections cited in Table 2, 12 are in Mexico and 10 are located elsewhere. Currently, Mexican herbaria house most specimens, a trend that seemed unattainable as recently as a couple of decades ago.

Table 3 presents a summary of the main results of the cleaning process of the source databases. There was variation in the number of records depending on the action; for example, the collector's name could only be assigned in 88.7% of the records after the cleaning process, leaving 11.3% of the records with uncertainty about the correct name of the collector. Thus, the number of records (discarding duplicates) for which the collector could be confidently identified and was a person rather than a collecting group or company was 1,998,740. The number of repeated (duplicate) records from a single collecting event was 878,290, which represents 30.5% of the total records assigned to a specific person.

Main collectors of Mexican flora. The analysis of the database allowed us to identify over 6,500 collectors (Table 4), of which 610 had 500 or more unique collection events attributed to them (without considering repeated

records). It is estimated that a large portion of the effort to document Mexico's natural capital composed of vascular plants is built on their exploration and collection efforts, represented by 1,658,608 records. In other words, about 9% of the collectors have collected 83% of the specimens documenting the great floristic richness of Mexico.

Appendix 1 contains the list of 610 main collectors, associated with information that generates a profile of each one. We describe some characteristics, such as the state where they did most of their collection activities, the herbarium or collection where most of their specimens are housed, the period in which they carried out their collecting activities, and the taxonomic family to which most of their collected specimens belong.

Among the list of main collectors, we identified only one set of possible homonyms: "Álvarez Álvarez, Armando", with collection years ranging from 1939 to 1951 and from 1964 to 1993. The difference in these collection dates did not allow us to conclude whether this name applied to 1 or 2 collectors.

Table 5 shows some details about the main collectors identified. For example, it is interesting to highlight that 18% of these main collectors are women. It is also evident that there has been more interest from collectors in taxonomic groups within Magnoliophyta (monocotyledons and dicotyledons), less in the ferns and allies, and an even smaller proportion in gymnosperms. An equivalent proportion for all the taxonomic groups is observed; except for the gymnosperms, the other groups did not differ substantially in their participation in the collections of these collectors.

The specimens collected by main collectors are deposited in 200 collections; however, 95 herbaria had records of 100 or more samples from 1 or more collectors. The National Herbarium of Mexico (MEXU) was the collection with the largest number of main collectors (559). Among them, 226 collectors had the largest number

Table 1
 Number of records from the source databases and of records used after cleaning.

	Records	Percentage
Source database (total records)	5,367,577	100
SNIB (Conabio)	4,011,670	74.7
MEXU (Instituto de Biología, UNAM)	1,355,907	25.3
Country = Mexico	3,923,911	100
SNIB (Mexico)	2,850,361	72.6
MEXU (Mexico)	1,073,550	27.4
Angiosperms, gymnosperms, ferns, and allies	3,704,664	100

Table 2

Herbaria with more than 20,000 records in the source database. Herbarium names are given in English, followed by the herbarium abbreviation (following Thiers, 2016) and, where applicable, the institution's original name in *italics*.

Scientific collection	Total records	Number of records from main collectors	Records contributed by main collectors	Number of main collectors
National Herbarium of Mexico (MEXU; Herbario Nacional de México, Instituto de Biología, UNAM)	1,079,972	898,630	83.2%	550
Collections of the National Forest and Soil Inventory (INFyS; Recolectas del Inventario Nacional Forestal y de Suelos)	272,222	270,123	99.2%	60
Herbarium of the Missouri Botanical Garden (MO)	234,033	208,754	89.2%	454
Herbarium of the Institute of Ecology, Xalapa (XAL; Instituto de Ecología, Xalapa)	210,148	177,702	84.6%	372
Herbarium of the Institute of Ecology, Patzcuaro (IEB; Instituto de Ecología, Pátzcuaro)	161,396	142,430	88.2%	373
Lundell Herbarium and University of Texas, Austin (LL-TEX)	165,409	138,976	84.0%	377
Herbarium of the National School Biological Sciences of the IPN (ENCB; Herbario de la Escuela Nacional de Ciencias Biológicas, IPN)	91,700	74,069	80.8%	365
United States National Herbarium (US)	80,463	71,666	89.1%	261
Herbarium of the Center for Scientific Reserach of Yucatán (CICY; Centro de Investigación Científica de Yucatán)	55,602	45,512	81.9%	149
Herbarium of the New York Botanical Garden (NY)	51,228	43,894	85.7%	329
Aarhus University "Palm Transect Database" (AAU)	50,847		0.0%	
Herbarium of the University of Arizona, Tucson (ARIZ)	41,317	37,379	90.5%	217
Herbarium of the Field Museum of Natural History, Chicago (F)	42,394	34,828	82.2%	100
Herbarium of the California Academy of Sciences, San Francisco (CAS)	32,714	30,801	94.2%	191
Herbarium of the Chiapas University of Sciences and Arts, Tuxtla Gutierrez (HEM; Universidad de Ciencias y Artes de Chiapas, Tuxtla Gutiérrez)	30,681	10,359	33.8%	12
Herbarium of the Universidad Autónoma Chapingo, Texcoco (CHAP)	24,010	19,016	79.2%	206
Herbarium of the Autonomous University of Querétaro (QMEX; Universidad Autónoma de Querétaro)	25,859	17,404	67.3%	91
Herbarium of the Royal Botanic Gardens, Kew, England (K)	21,600	18,603	86.1%	235
National Plant Germplasm Bank (BANGEV; Banco Nacional de Germoplasma Vegetal)	20,105	11,092	55.2%	5
Geo B. Hinton Herbarium (GBH)	20,501	4,873	23.8%	4

of their specimens in this collection, to which should be added another 60 main collectors that participated in the activities of the National Forest and Soil Inventory (INFyS), whose materials are deposited in MEXU. The collection with the second most important set of collectors was MO (454 collectors), followed by LL-TEX (377), IEB (373), XAL (372), and ENCB (365).

Upon analyzing the biomes in which the main collectors did their work, it can be observed that the largest number of them have focused their work on temperate forests, followed by seasonally dry tropical forests and xerophytic scrub. Probably due to the small area they cover, humid montane forests have not been as widely explored by this group of collectors, which is reflected in the lower activity

Table 3

Total number of records after completing the cleaning process.

Angiosperms, gymnosperms, ferns, and allies	3,704,664	100.0%
Assigned a collector after cleaning	3,286,348	88.7%
“Collector name” field contained names of people	2,877,030	77.7%
Fields ‘Collector’-‘Collection number’ had unique value	1,998,740	54.0%
Repeated or duplicate records (% of records where the collector named was a person)	878,290	30.5%
Collector name field was empty or invalid	208,950	5.6%
Record was difficult to identify (e.g., a single surname or initials only)	198,531	5.4%
Collector not assigned after cleaning process	418,317	11.3%

Table 4

Number of collectors and the records associated with them in the source databases (DB).

Type of collector	Number of collectors (% of total)	Records (% of total)
Main collectors (≥ 500 records in DB)	610 (9)	1,658,608 (83)
Other collectors (<500 records in DB)	6,052 (91)	340,128 (17)
Total	6,661 (100)	1,998,736 (100)

of many of them in this biome. Similarly, in constituting a specific habitat type, only a small number of main collectors focused on intensive collection of aquatic and subaquatic vegetation.

In evaluating how long this set of collectors has been dedicated to collecting activities, most of them dedicated less than a decade to this occupation. About 25% of the collectors collected for over 2 decades, and a much lower proportion of them participated in collecting efforts for 3 decades or more. In this respect, Dr. Jerzy Rzedowski stands out, having been the most noteworthy botanist in many respects, including as a taxonomist, mentor, administrator of a research institution, herbarium manager, etc. He has contributed specimens to one of the most important collections of Mexican plants at a national level for more than 50 years. Other collectors who have made great contributions to the knowledge of botanical richness, especially in the northwestern part of the country, include Dr. Richard S. Felger (University of Arizona), who also spent nearly 50 years exploring that part of the country collecting botanical specimens. The Hinton family (father, son, and grandson) have also been collecting for more than 50 years (Hinton et al., 2019).

Collectors by state. The number of main collectors differed among states. For example, Tlaxcala has only 9 main collectors that have stood out for their collection efforts (with more than 100 records in the state). Similarly,

there were only 12 main collectors that stood out in Aguascalientes, 20 in Colima, and 21 in Morelos. In contrast, the states with the highest levels of activity by main collectors were Oaxaca (254), Veracruz (231), Chiapas (203), Jalisco (123), Puebla (120), Michoacán (114), and Guerrero (108). In general, the mode was between 30 and 40 main collectors per state. This is reflected in a higher number of records (collection events), since Tlaxcala had only 5,510 records, while Oaxaca surpassed that number by nearly 40-fold (Fig. 1).

Collectors and collection decades. The frequency by decade of specimens collected compared to the frequency of the main collectors identified shows similar tendencies (Fig. 2). Special attention should be paid to the 1980s, when Mexican institutions had funding specifically earmarked for botanical exploration, as well as the 2010s, when there was intense collection activity by the National Forest Inventory program, which recorded around 300,000 specimens.

Figure 3 shows the distribution over time of the activity of main collectors in Mexico. It is notable that there was intense activity beginning in the 1950s, when Mexican institutions began intense exploration of the territory and became involved in a larger number of floristic inventories.

Distribution of collection events by family. There was a linear relationship between the number of collection events and the number of main collectors using the number

Table 5

Some characteristics observed among main collectors. *Collectors with 100 or more records in the taxonomic group, biome, or collection.

	Number of main collectors
Main collectors	610 (100.0%)
Female	111 (18.1%)
Male	499 (81.9%)
Taxonomic group*	
Ferns and allies	154 (25.3%)
Gymnosperms	84 (13.8%)
Monocots (Liliopsida)	422 (69.3%)
Dicots (Magnoliopsida)	595 (97.7%)
Author of species description	225 (36.9%)
Biome*	
Seasonally dry tropical forest	407 (66.8%)
Humid tropical forest	288 (47.3%)
Humid montane forest	151 (24.8%)
Temperate forest	471 (77.3%)
Aquatic and subaquatic vegetation	61 (10.0%)
Xerophytic scrub and grassland	308 (50.6%)
Number of collections*	
Herbaria with records from main collectors	95
Number of years of collecting activity	
1 to 9 years	319 (52.4%)
10 to 19 years	152 (25.0%)
20 to 29 years	69 (11.3%)
30 to 39 years	51 (8.4%)
40 to 49 years	16 (2.6%)
50 or more years	2 (0.3%)

of records per family (Fig. 4). This significant relationship supports the cutoff points used in the selection of the collectors analyzed (that is, 500 specimen records to consider a collector a “main collector” and 100 to consider the collector important for a family in this analysis). In the database, we recorded 277 families of flowering plants, including both native and introduced species; this number represents 67% of the 416 families recognized by the Angiosperm Phylogeny Group (APG IV, Chase et al., 2016). Of these figures, main collectors documented specimens for 272 of these families (98% of the total recorded).

The line in figure 4 suggests that the number of records is strongly linearly correlated with the number of main collectors per family, with a slope of 516.3. For example, for the family Poaceae, we identified 219 main collectors who have collected 100 or more specimens from that family, which multiplied by 516.3 yields a total figure of 113,070 records, a number that is close to the total records documented for the family in the database (SNIB+MEXU). Another implication of this significant positive correlation is that the database analyzed is representative of the botanical collections in terms of the collectors and the taxonomic families in Mexico. For the 277 families recorded in the database, only 133 of them are associated with at least one main collector that has collected a minimum of 100 specimens from the family. In contrast, for more than 160 families, such as Aristolochiaceae or Portulacaceae, no main collector reached at least 100 specimens.

Homonymy index. The value of this index increased due to records that were missing values in the collection number field or to records that had inconsistencies between the collection number and collection year fields. This could be due to, among other causes, mis-assignment of the record to a particular collector. More than half of the main collectors (321) were associated with a homonymy index of less than 1%, while only 7.1% (43) have a value above 10%, which in most cases was due to records that were missing collection numbers. An exhaustive review of these 43 collectors allowed us to decide which of these 2 causes led to this high value and, in that case correct the mistaken assignments.

Another point for accessing the list of main collectors is available on the website db-Dalea (www.colectores.abaco2.org; Fig. 5), which was generated specifically to allow the public to consult these data. There, the public can obtain lists by family, state, year, or collecting period, in addition to allowing specific searches by combining criteria among the 4 associated dimensions. An abbreviated version is available on the website AbaTax (www.abatax.abaco2.org) to create identification keys where they can be consulted in a streamlined way as a dynamic list (Murguía-Romero et al., 2021).

Discussion

The results indicate that less than 10% of the collectors contributed more than 80% of the collection effort, which may seem like an overestimation. It must be noted that it was not possible to clean the records completely; for about 11% of the records in the database, the names of the collectors remain uncertain. Our estimations suggest that the total number of collectors is surely higher than previously reported, perhaps exceeding 7,000.

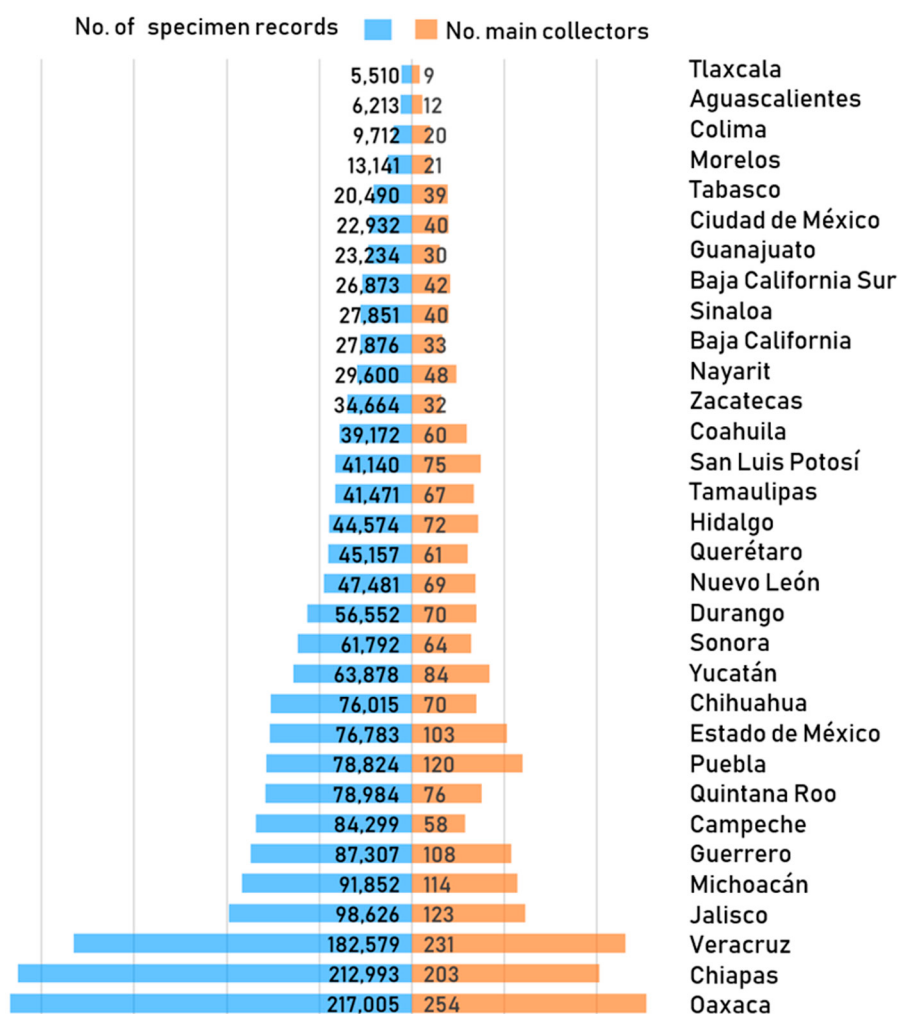


Figure 1. Number of specimens (records in the database) and main collectors per Mexican state. The number of main collectors (with more than 100 records in the state) is indicated.

Considering a relatively small set of collectors (610) with respect to the total identified (6,661) may provide advantages for future floristic and taxonomic studies. Once the information associated with these main collectors is better known, data cleaning will require less effort if first focused on this group of main contributors, then on other collectors. It is likely that many of the collectors that could not be identified during the cleaning process are members of local institutions, who once they are identified by curators of the databases of the collections at those institutions, will facilitate the process of data cleaning and normalization.

Several collections in Mexico still have low percentages of digitalization or inclusion in public databases, as is the case of the National School of Biological Sciences of the IPN (ENCB) and the Herbarium of the Mexican

Association of Orchidology (AMO). Surely if these collections are considered in more detail, there will be other collectors that could be incorporated into the list of main collectors.

Although there are tools available on the internet to consult lists of collectors, to date none presents an orderly and clean format of names of the people and associated attributes. For example, the list included on the “Harvard University Herbaria & Libraries” website (https://kiki.huh.harvard.edu/databases/botanist_search.php), although useful in some contexts, is not useful for finding collectors from Mexico, since in addition to the inclusion of several homonyms and exclusion of many important Mexican collectors, the names are not associated with important attributes such as the number of specimens or geographic

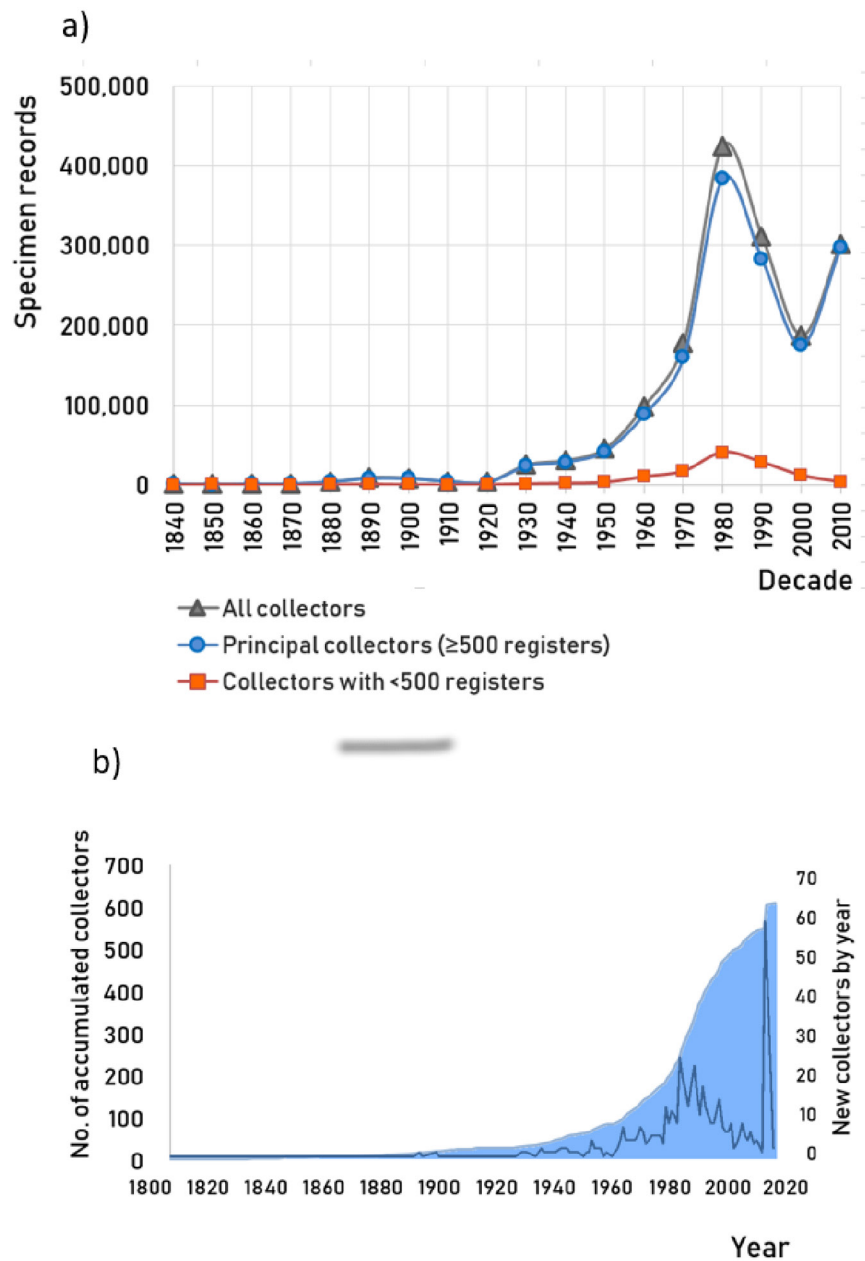


Figure 2. Collectors in Mexico over time. a) Number of records (collection events) per decade by type of collector, b) accumulated number of collectors and new collectors per year.

region below the country level. Penn et al. (2018) assigned between 10,000 and 15,000 collectors for Mexico during the second half of the last century; comparing that number with the fewer than 7,000 identified in this work, it seems that that number may be an overestimation, although it should be considered that in this work, we did not count the total collectors, excluding nearly 11% of the records,

mainly of collectors that were not well represented in the database.

The informatics tool presented in this work provides a way to generate lists of main collectors in Mexico by state, family, or a combination of both. Thus, it provides a summary of the main data associated with the set of records associated with each main collector.



Figure 3. Time intervals of collection of main collectors in Mexico (in descending order). Hinton, G. B. corresponds to the interval representing the group of Hinton father, son, and grandson.

Rzedowski et al. (2009) discuss that between the years 1700 and 1930, approximately 332 collectors participated in collection efforts; of those, 34 are included in this study, who documented 500 or more collection records. Unfortunately, those authors did not indicate the total number of samples collected by each of those collectors, so it is difficult to make further comparisons.

Approximately 18% of the main collectors identified in this study are women, highlighting the important contribution women have made to the knowledge of the flora of Mexico. However, it is likely that this proportion

is an underestimate due the combination of 2 factors; first, the method used in this work assigned each record only to the first collector noted on the label, and second, that in mixed gender teams, the male partner is more often noted first, regardless of the relationship between the partners (known as the Matilda effect). This occurs frequently, noting the husband before the wife, father before daughter, brother before sister. The participation of women as the first collector began to be registered incipiently in the first decades of the twentieth century and has increased recently. An analysis using the second collector noted will

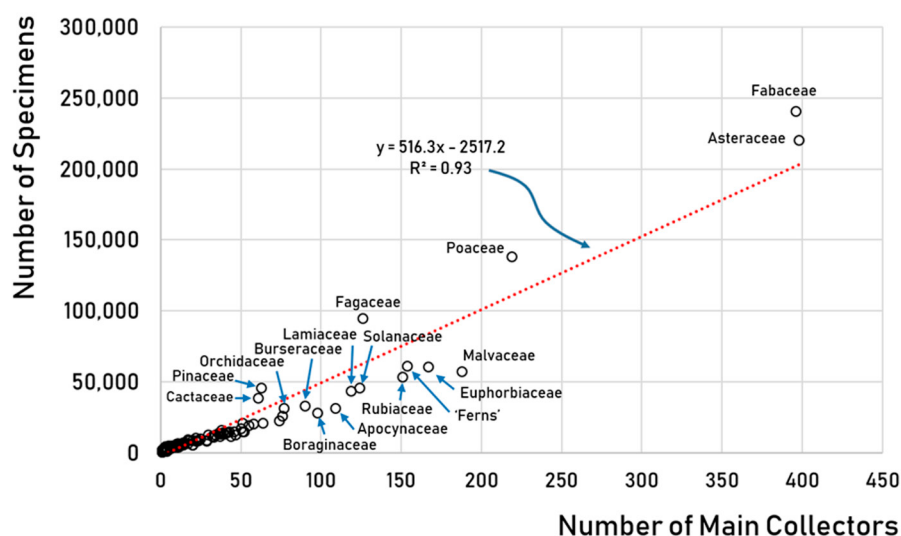


Figure 4. Number of main collectors and their numbers of records per family in the database analyzed. This considers collectors with 500 or more collection events and with 100 or more specimens from the family.

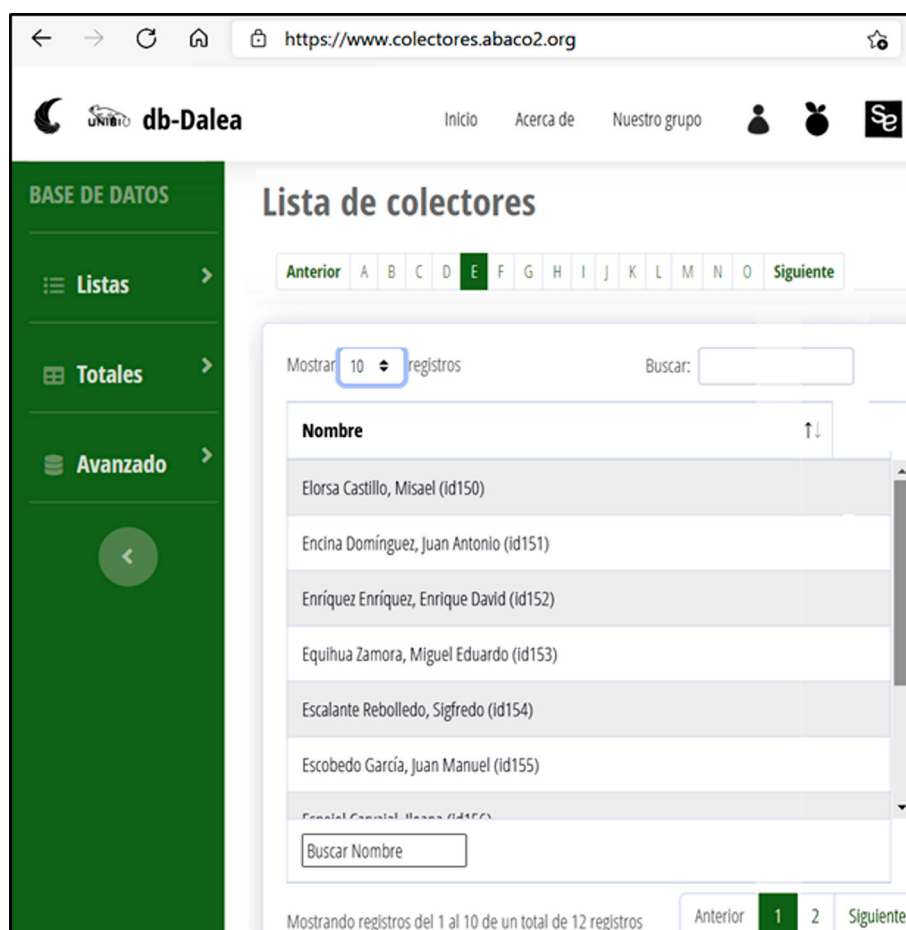


Figure 5. Appearance of the interface of the website 'db-Dalea' for consulting the list of main collectors in Mexico and their associated attributes (www.colectores.abaco2.org).

likely reveal that the participation of women collectors has been greater than reported in this work.

Another important aspect of having a clean list of collectors is that it facilitates the future capture of specimen data in biological collection databases. A catalogue that can be linked to a selectable list in the data entry interface would allow the person entering the data to choose an element, with the benefit not only of streamlining the process by investing less time in capturing this important field but also keeping the list of collectors clean immediately, without the need for a further data cleaning and normalization process.

The bulk of the activity of the main collectors identified in this work is focused on certain regions, especially the south and southeastern parts of the country. There were few main collectors that worked in the north of the country, and most of them were not Mexican. The proximity to research centers in the USA of the northern part of the country is reflected in the more intense collecting activity there by collectors from the USA. For example, of the 21 main collectors that collected in Sonora, 12 (57%) are of foreign nationalities, compared to only 21% of the main collectors in Chiapas and 25% in Veracruz.

The collector's name is an important field to point out in biodiversity databases. This datum can be used to estimate species representativeness, as well as the feasibility of using or excluding records from biological collections to estimate abundance or structure of communities where they prosper (Steege et al., 2011). On the other hand, having a homogeneous and standardized list of the collectors of

Mexico is important to facilitate the citation of specimens by botanical researchers, since the primary key used to document a variety of data, for example, in a taxonomic revision, is the name of the collector and the collection number.

We hope that this contribution will provide better information on vascular plant collectors in Mexico in the near future. It will doubtless facilitate the homogenization of collector names among the different databases that are being generated or those that have already been made public. The names included in Appendix 1 will surely allow the standardization of the information in most of their records. Future stages that integrate other collectors that have contributed to the formation of the natural capital we possess will allow access to better information in the many studies of Mexican biodiversity that are in progress currently or will be carried out in the future.

Acknowledgements

To the Conabio and MEXU for facilitating information from their digitalized databases of Mexican flora. Thanks to Guadalupe Segura for comments on the manuscript and for help and experience in database management, which greatly facilitated the integration and cleaning of much of the information analyzed. We also recognize the editing of the English text by Lynna Kiere. We are thankful for the comments of Susana Valencia Ávalos and an anonymous reviewer.

Appendix. List of main collectors.

The information on the main collectors in this appendix is structured as paragraphs containing 7 attributes of each collector, as in the following example:

341.- Martínez Salas, Esteban Manuel (1977-2016) A: E. Martínez B: MEXU 18 C: CHP 14 D: ih = 3.8%

341.- A number assigned sequentially in alphabetical order

Martínez Salas, Esteban Manuel- The name of the collector in the format "Paternal surname, Maternal surname, Given name(s) for the Ibero-American names. In the case of Anglo-Saxon names the format is "Last name, Given name (including first and middle names).

(1977-2016)- (earliest collection year–latest collection year) considering years with at least 10 collections.

A: E. Martínez- If the collector is the author of a description of a vascular plant, the abbreviation is included following Villaseñor et al. (2008).

B: MEXU 18- The abbreviation of the collection that houses the highest number of the collector's specimens, followed by a figure indicating the number of collections with 100 or more records in the database.

C: CHP 14- Mexican state with the highest number of specimens from the collector (abbreviations follow the standard ISO 3166-2), followed by a figure representing the number of states in which the collector had 100 or more records.

D: ih = 3.8%- Homonymy index. Percentage of the records with missing or incongruent values in the fields collection number-collection year (e.g., a single collection number associated with more than one collection year).

- 1.- Acevedo Rosas, Raúl (1985-1997) A: not an author B: XAL 5 C: VER 5 D: ih > 10%
- 2.- Acevedo Santoyo, Saturnino (1984-1996) A: not an author B: CIIDIR 4 C: DUR 1 D: ih > 10%
- 3.- Acosta Castellanos, Salvador (1982-1997) A: Acosta B: MEXU 2 C: OAX 3 D: ih = 3.7%
- 4.- Acosta Pérez, Roberto (1984-1991) A: not an author B: XAL 6 C: VER 2 D: ih = 7.2%
- 5.- Aguilar Méndez, Gabriel (2002-2004) A: not an author B: MEXU 5 C: CHP 1 D: ih < 1%
- 6.- Aispuro Ramírez, Andrés (2010-2010) A: not an author B: INFyS 1 C: SON 2 D: ih < 1%
- 7.- Alcántara Ayala, Othón (1993-1998) A: not an author B: FCME 2 C: HID 1 D: ih < 1%
- 8.- Alcorn, Janis Bristol (1977-1979) A: not an author B: LL-TEX 3 C: SLP 2 D: ih = 1.3%
- 9.- Altamirano Carbajal, Fernando (1888-1905) A: not an author B: MEXU 1 C: QUE 0 D: ih < 1%
- 10.- Alvarado Cárdenas, Leonardo Osvaldo (2002-2004) A: Alvarado-Cárdenas B: MEXU 2 C: CHP 1 D: ih < 1%
- 11.- Álvarez Alatríste, Alejandro (2010-2010) A: not an author B: INFyS 1 C: ROO 2 D: ih < 1%
- 12.- Álvarez Álvarez, Armando (1939-1951) A: not an author B: CAS 2 C: CHP 1 D: ih > 10%
- 13.- Álvarez Álvarez, Armando (1964-1993) A: not an author B: CAS 3 C: CHP 2 D: ih < 1%
- 14.- Álvarez Montejó, Demetrio (1997-2015) A: not an author B: MEXU 4 C: CAM 6 D: ih < 1%
- 15.- Álvarez Sosa, Alejandro (2010-2010) A: not an author B: INFyS 1 C: CAM 3 D: ih < 1%
- 16.- Álvaro Méndez, Pascual (1996-1997) A: not an author B: MEXU 2 C: CAM 1 D: ih < 1%
- 17.- Anderson, William Russell (1966-1988) A: W.R. Anderson B: MEXU 6 C: OAX 5 D: ih = 1.4%
- 18.- Argüelles, Elizabeth (1975-1991) A: not an author B: MEXU 3 C: QUE 2 D: ih = 1.5%
- 19.- Arias Jaimés, Israel (2010-2010) A: not an author B: INFyS 1 C: JAL 4 D: ih < 1%
- 20.- Arias Montes, Ángel Salvador (1990-2010) A: S. Arias B: MEXU 1 C: PUE 2 D: ih < 1%
- 21.- Arsène, Gerfroy Frere (1906-1913) A: not an author B: MO 5 C: MIC 3 D: ih = 2.7%
- 22.- Avendaño Reyes, Sergio (1975-1993) A: S. Avendaño B: XAL 4 C: VER 1 D: ih = 3.1%
- 23.- Ávila González, Nicolás (2010-2010) A: not an author B: INFyS 1 C: CHH 2 D: ih < 1%
- 24.- Ayala Aguilar, María Guadalupe (1981-1991) A: not an author B: MEXU 3 C: JAL 1 D: ih = 9.4%
- 25.- Ayala Gómez, Mario (2010-2010) A: not an author B: INFyS 1 C: CHH 1 D: ih < 1%
- 26.- Ayala Razo, José Manuel (2005-2007) A: not an author B: FCME 2 C: OAX 2 D: ih < 1%
- 27.- Bachem Calmud, Ursula (1988-1989) A: not an author B: CHAP 3 C: CHP 1 D: ih = 1.2%
- 28.- Balderas Aguilar, Patricia (1998-2004) A: not an author B: QMEX 2 C: QUE 1 D: ih > 10%
- 29.- Balleza Cadengo, José de Jesús (1982-2013) A: not an author B: HUAZ 7 C: ZAC 2 D: ih = 1.8%
- 30.- Balls, Edward Kent (1938-1938) A: not an author B: XAL 3 C: VER 1 D: ih < 1%
- 31.- Baquedano Peralta, Miguel (2010-2010) A: not an author B: INFyS 1 C: OAX 4 D: ih < 1%
- 32.- Baquedano Peralta, Renán (2010-2010) A: not an author B: INFyS 1 C: OAX 3 D: ih < 1%
- 33.- Bárcenas Luna, Rolando Tenoch (1993-2007) A: R.T. Bárcenas B: MEXU 2 C: GUA 3 D: ih < 1%
- 34.- Barkley, Fred Alexander (1944-1966) A: F.A. Barkley B: LL-TEX 5 C: NLE 12 D: ih < 1%
- 35.- Barrie, Fred Rogers (1983-1986) A: Barrie B: LL-TEX 2 C: TAM 2 D: ih < 1%
- 36.- Bartholomew, Bruce Monroe (1985-1985) A: B.M. Barthol. B: MEXU 2 C: OAX 4 D: ih < 1%
- 37.- Basurto, Pablo (1978-1980) A: not an author B: MEXU 2 C: PUE 1 D: ih < 1%
- 38.- Bautista Páez, David (2010-2010) A: not an author B: INFyS 1 C: OAX 4 D: ih < 1%
- 39.- Beaman, John Homer (1957-1972) A: Beaman B: MEXU 7 C: VER 3 D: ih = 1.3%
- 40.- Becerra Zavaleta, Joaquín (1995-1996) A: not an author B: XAL 1 C: VER 1 D: ih < 1%
- 41.- Beetle, Alan Ackerman (1971-1981) A: Beetle B: MEXU 5 C: JAL 5 D: ih < 1%
- 42.- Benítez Paredes, Alejandro (1989-1992) A: not an author B: MEXU 5 C: DUR 3 D: ih = 1.8%
- 43.- Berlandier, Jean Louis (1827-1832) A: Berland. B: G 3 C: ZAC 4 D: ih < 1%
- 44.- Blanckaert, Isabelle (2000-2004) A: not an author B: IZTA 1 C: OAX 2 D: ih < 1%
- 45.- Boege, Wolfgang (1966-1974) A: not an author B: MEXU 2 C: PUE 6 D: ih = 1.6%
- 46.- Bojórquez Bojórquez, Germán Aurelio (1984-1995) A: not an author B: UAS 2 C: SIN 1 D: ih < 1%
- 47.- Bonilla Barbosa, Jaime Raúl (1986-2013) A: Bonilla B: HUMO 3 C: CHP 2 D: ih = 8.4%
- 48.- Botteri, Mateo (1854-1855) A: not an author B: [NOT IDENTIFIED] 3 C: VER 1 D: ih = 1.3%
- 49.- Bourgeau, Eugène (1865-1866) A: not an author B: GH 7 C: VER 2 D: ih = 7.9%
- 50.- Boyas Delgado, José Concepción (1972-1982) A: not an author B: INIF 1 C: PUE 2 D: ih > 10%
- 51.- Boyd, Steve (1988-1993) A: not an author B: MEXU 3 C: BCN 2 D: ih < 1%
- 52.- Boyle, Bradley Lorne (1991-2008) A: not an author B: MO 3 C: OAX 2 D: ih < 1%
- 53.- Brailovsky Signoret, David (2005-2006) A: not an author B: MEXU 1 C: ZAC 2 D: ih < 1%
- 54.- Brandegee, Townshend Stith (1889-1904) A: Brandegee B: US 3 C: BCS 3 D: ih > 10%
- 55.- Bravo Avilez, David (2013-2015) A: not an author B: UAMIZ 2 C: OAX 1 D: ih < 1%
- 56.- Bravo Bolaños, Oscar (1989-1992) A: not an author B: MEXU 4 C: DUR 3 D: ih = 3.9%

- 57.- Bravo Hollis, Helia (1931-1967) A: Bravo B: MEXU 2 C: PUE 8 D: ih > 10%
- 58.- Breedlove, Dennis Eugene (1962-1991) A: Breedlove B: MEXU 12 C: CHP 18 D: ih = 1.3%
- 59.- Brett, John (1991-1992) A: not an author B: MO 4 C: CHP 1 D: ih = 1.5%
- 60.- Bullock, Stephen Harold (1980-1988) A: not an author B: MEXU 1 C: JAL 1 D: ih < 1%
- 61.- Burciaga, Francisco (2010-2010) A: not an author B: INFyS 1 C: DUR 2 D: ih < 1%
- 62.- Burgess, Tony Lambard (1970-1990) A: not an author B: MEXU 2 C: BCN 3 D: ih < 1%
- 63.- Búrquez Montijo, Alberto (1990-2006) A: not an author B: MEXU 3 C: SON 2 D: ih < 1%
- 64.- Bye, Robert Arthur (1970-2013) A: Bye B: MEXU 4 C: CHH 8 D: ih = 1.2%
- 65.- Caballero Nieto, Javier (1977-1979) A: not an author B: MEXU 1 C: MIC 1 D: ih < 1%
- 66.- Cabanillas Zavala, Daniel (2010-2010) A: not an author B: INFyS 1 C: SIN 1 D: ih < 1%
- 67.- Cabrera Cano, Edgar Francisco (1980-1990) A: not an author B: MEXU 9 C: ROO 7 D: ih = 6.3%
- 68.- Cabrera Luna, José Alejandro (2002-2014) A: not an author B: QMEX 2 C: QUE 1 D: ih = 7.6%
- 69.- Calónico Soto, Jorge (1994-2012) A: not an author B: MEXU 9 C: GRO 8 D: ih < 1%
- 70.- Calvillo García, José Caín (2010-2010) A: not an author B: INFyS 1 C: MIC 9 D: ih < 1%
- 71.- Calzada, Juan Ismael (1970-2010) A: Calzada B: MEXU 18 C: VER 17 D: ih = 4.2%
- 72.- Campos Ríos, María Goreti (1980-1992) A: not an author B: MEXU 3 C: GRO 3 D: ih > 10%
- 73.- Campos Villanueva, Alvaro Delfino (1987-2012) A: A. Campos B: MEXU 5 C: OAX 3 D: ih < 1%
- 74.- Carlson, Margery Claire (1949-1955) A: Carlson B: F 3 C: CHP 1 D: ih = 1.2%
- 75.- Carnevali Fernández-Concha, Germán (1996-2005) A: Carnevali B: CICY 4 C: YUC 3 D: ih = 1.2%
- 76.- Carranza González, Eleazar (1986-2004) A: E. Carranza B: IEB 7 C: QUE 4 D: ih = 3.5%
- 77.- Carranza Pérez, Miguel Agustín (1981-2007) A: M. Carranza B: MEXU 7 C: COA 5 D: ih = 5.7%
- 78.- Carrillo Deferia, Esteban (2010-2010) A: not an author B: INFyS 1 C: CAM 3 D: ih < 1%
- 79.- Carrillo Reyes, Pablo (1999-2012) A: not an author B: IEB 2 C: JAL 5 D: ih < 1%
- 80.- Carter, Annetta Mary (1947-1975) A: A.M. Carter B: MEXU 10 C: BCS 4 D: ih = 2.8%
- 81.- Castañeda Robles, Javier (1987-1988) A: not an author B: MEXU 1 C: MEX 1 D: ih < 1%
- 82.- Castilla Hernández, Martha Elvira (1980-1986) A: not an author B: ENCB 1 C: MEX 1 D: ih < 1%
- 83.- Castillo Campos, Gonzalo (1976-2012) A: Cast.-Campos B: XAL 9 C: VER 7 D: ih = 1.9%
- 84.- Castillo Hernández, Juan José (1994-1998) A: not an author B: CHIP 2 C: CHP 1 D: ih = 1.2%
- 85.- Castrejón Reyna, Javier Felipe (1999-2000) A: Castrejón B: MEXU 2 C: OAX 2 D: ih < 1%
- 86.- Castro Arizmendi, René (2010-2010) A: not an author B: INFyS 1 C: TAM 2 D: ih < 1%
- 87.- Castro Trejo, Reynaldo (1994-1998) A: not an author B: HUMO 1 C: CHP 1 D: ih = 1.1%
- 88.- Catalán Heverástico, Cesario (1986-1988) A: not an author B: MEXU 2 C: GRO 1 D: ih = 2.1%
- 89.- Cedillo Trigos, Refugio (1967-1987) A: not an author B: MEXU 6 C: VER 2 D: ih > 10%
- 90.- Cerna Ortíz, Alfredo (2010-2010) A: not an author B: INFyS 1 C: MIC 3 D: ih < 1%
- 91.- Cerros Tlatilpa, Rosa (1990-2006) A: not an author B: HUMO 2 C: CHP 2 D: ih < 1%
- 92.- Céspedes Cárdenas, Leonardo Andrés (2007-2008) A: not an author B: MEXU 1 C: CMX 1 D: ih < 1%
- 93.- Chamé Ocaña, Adaluz (1994-1995) A: not an author B: MEXU 3 C: CHP 1 D: ih = 2.4%
- 94.- Chan Vermont, Cástulo (1980-1992) A: not an author B: CICY 8 C: CAM 4 D: ih = 6.9%
- 95.- Chavelas Pólito, Javier (1964-1973) A: not an author B: MEXU 4 C: CAM 6 D: ih = 3.2%
- 96.- Chávez Gándara, César Alejandro (2010-2010) A: not an author B: INFyS 1 C: CHH 1 D: ih < 1%
- 97.- Chávez Mata, José Luis (2010-2010) A: not an author B: INFyS 1 C: DUR 1 D: ih < 1%
- 98.- Chávez Rendón, César (2001-2004) A: not an author B: JEO 1 C: OAX 1 D: ih < 1%
- 99.- Cházaro Basáñez, Miguel de Jesús (1973-2009) A: Cházaro B: XAL 7 C: VER 10 D: ih = 5.1%
- 100.- Chiang Cabrera, Fernando (1970-1991) A: F. Chiang B: MEXU 8 C: PUE 12 D: ih = 4.2%
- 101.- Clausen, Robert Theodore (1943-1980) A: R.T. Clausen B: MEXU 1 C: TAM 2 D: ih = 6.1%
- 102.- Cochrane, Theodore Stuart (1978-1990) A: Cochrane B: ZEA 3 C: JAL 2 D: ih < 1%
- 103.- Colli Ucán, Wilberto (2004-2004) A: not an author B: ECO-CH-H 1 C: ROO 1 D: ih < 1%
- 104.- Colunga García-Marín, Patricia (1977-1987) A: not an author B: MEXU 2 C: YUC 3 D: ih > 10%
- 105.- Contreras Jiménez, José Luis (1980-2007) A: J.L. Contr. B: HUAP 4 C: PUE 2 D: ih = 1.5%
- 106.- Contreras Mejía, Rafael (2010-2010) A: not an author B: INFyS 1 C: OAX 3 D: ih < 1%
- 107.- Conzatti, Cassiano (1895-1937) A: Konz. B: MEXU 4 C: OAX 2 D: ih = 2.7%
- 108.- Cornejo Tenorio, María Guadalupe (2000-2016) A: not an author B: IEB 3 C: MIC 3 D: ih = 2.2%
- 109.- Corral Díaz, Rafael (1983-1995) A: not an author B: MO 4 C: DUR 2 D: ih < 1%
- 110.- Correll, Donovan Stewart (1958-1964) A: Correll B: LL-TEX 3 C: CHH 5 D: ih < 1%
- 111.- Cortés Arriaga, Luis (1980-1987) A: not an author B: MEXU 2 C: OAX 1 D: ih = 1.5%
- 112.- Cowan, Clark Paul (1978-1985) A: Cowan B: MEXU 7 C: TAB 10 D: ih = 3.1%

- 113.- Croat, Thomas Bernard (1977-2008) A: Croat B: MO 5 C: CHP 13 D: ih < 1%
- 114.- Cronquist, Arthur John (1962-1984) A: Cronquist B: MEXU 4 C: OAX 11 D: ih = 2.0%
- 115.- Crutchfield, John (1959-1960) A: not an author B: LL-TEX 3 C: TAM 3 D: ih < 1%
- 116.- Cruz Cisneros, Roberto (1963-1970) A: not an author B: ENCB 3 C: MEX 4 D: ih = 5.1%
- 117.- Cruz Durán, Ramiro (1993-2002) A: Cruz-Durán B: FCME 3 C: GRO 4 D: ih < 1%
- 118.- Cruz Espinosa, Cutberto Ángel (2001-2006) A: not an author B: MEXU 1 C: OAX 1 D: ih = 2.7%
- 119.- Cuevas Guzmán, Ramón (1984-2002) A: Cuevas B: ZEA 4 C: JAL 2 D: ih = 5.2%
- 120.- Cuevas Sánchez, Jesús Axayacatl (1989-2004) A: not an author B: BANGEV 1 C: PUE 8 D: ih < 1%
- 121.- Damián Mora, Miguel René (2010-2010) A: not an author B: INFyS 1 C: ROO 1 D: ih < 1%
- 122.- Daniel, Thomas Franklin (1978-1996) A: T.F. Daniel B: MEXU 5 C: BCS 5 D: ih < 1%
- 123.- Davidse, Gerrit (1975-1984) A: Davidse B: MO 2 C: CHP 10 D: ih < 1%
- 124.- Deferia Carrillo, Eleazar (2010-2010) A: not an author B: INFyS 1 C: CAM 3 D: ih < 1%
- 125.- de la Cerda Lemus, Margarita (1968-1990) A: de la Cerda B: HUAA 3 C: AGU 1 D: ih = 1.2%
- 126.- de la Torre Almaraz, Rodolfo (2013-2014) A: not an author B: FITO-UBIPRO 1 C: PUE 2 D: ih < 1%
- 127.- Delgadillo Rodríguez, José (1985-1998) A: not an author B: BCMEX 1 C: BCN 1 D: ih < 1%
- 128.- Delgado Alvarado, Julio (2010-2013) A: not an author B: INFyS 1 C: DUR 1 D: ih < 1%
- 129.- Delgado Salinas, Alfonso Octavio (1974-2008) A: A. Delgado B: MEXU 1 C: JAL 7 D: ih = 1.8%
- 130.- Destruel, Hermano Nicolás Gustave (1907-1913) A: not an author B: MEXU 2 C: PUE 1 D: ih < 1%
- 131.- Díaz Hernández, Erika (2010-2010) A: not an author B: INFyS 1 C: OAX 4 D: ih < 1%
- 132.- Díaz Luna, Carlos Luis (1967-1989) A: not an author B: MEXU 7 C: JAL 4 D: ih = 1.6%
- 133.- Díaz Vilchis, Irene (1988-1993) A: not an author B: MEXU 3 C: HID 2 D: ih < 1%
- 134.- Díaz-Barriga Vega, Horalía (1985-1993) A: not an author B: IEB 6 C: MIC 3 D: ih = 2.5%
- 135.- Diego Pérez, Nelly (1965-2000) A: Diego B: MEXU 5 C: GRO 3 D: ih < 1%
- 136.- Diggs, George Minor (1979-1986) A: Diggs B: XAL 4 C: VER 3 D: ih < 1%
- 137.- Domínguez Cadena, Reymundo (1985-2011) A: not an author B: HCIB 2 C: BCS 1 D: ih < 1%
- 138.- Domínguez León, Miguel (1990-2003) A: M. Domínguez B: HCIB 3 C: BCS 1 D: ih = 2.3%
- 139.- Domínguez Licona, Eduardo (1998-1999) A: not an author B: FCME 1 C: GRO 1 D: ih < 1%
- 140.- Domínguez Mariani, Antonio (1993-1998) A: not an author B: MEXU 1 C: JAL 2 D: ih = 7.9%
- 141.- Dorado Ramírez, Oscar Roberto (1982-1987) A: Dorado B: MEXU 2 C: PUE 3 D: ih = 1.5%
- 142.- Dorantes López, Jesús (1971-1975) A: not an author B: XAL 7 C: VER 1 D: ih = 4.6%
- 143.- Dorr, Lawrence Joseph (1981-1983) A: Dorr B: LL-TEX 2 C: NLE 2 D: ih < 1%
- 144.- Dressler, Robert Louis (1949-1961) A: Dressler B: US 4 C: VER 4 D: ih < 1%
- 145.- Dunn, David Baxter (1970-1977) A: D.B. Dunn B: MO 3 C: MEX 1 D: ih < 1%
- 146.- Duno de Stefano, Rodrigo (2003-2006) A: not an author B: MO 4 C: YUC 2 D: ih < 1%
- 147.- Durán Espinosa, Carlos Manuel (1986-2001) A: C. Durán-Espinosa B: XAL 3 C: VER 1 D: ih = 6.2%
- 148.- Durán Fernández, Alejandro (1994-1997) A: not an author B: MEXU 1 C: CHP 1 D: ih > 10%
- 149.- Durán García, Rafael (1983-2005) A: not an author B: CICY 6 C: ROO 3 D: ih = 6.2%
- 150.- Elorsa Castillo, Misael (1998-2003) A: not an author B: MEXU 5 C: OAX 1 D: ih = 1.0%
- 151.- Encina Domínguez, Juan Antonio (1996-2011) A: not an author B: MEXU 2 C: COA 2 D: ih < 1%
- 152.- Enríquez Enríquez, Enrique David (1992-2000) A: not an author B: HUAZ 2 C: ZAC 1 D: ih = 1.8%
- 153.- Equihua Zamora, Miguel Eduardo (1978-1981) A: not an author B: ENCB 3 C: HID 3 D: ih = 2.7%
- 154.- Escalante Rebolledo, Sigfredo (1983-1991) A: not an author B: CICY 4 C: YUC 2 D: ih = 6.2%
- 155.- Escobedo García, Juan Manuel (1985-1993) A: not an author B: IEB 5 C: MIC 1 D: ih = 2.1%
- 156.- Espejel Carvajal, Ileana (1980-1990) A: not an author B: CICY 4 C: YUC 3 D: ih = 4.5%
- 157.- Espejo Serna, Mario Adolfo (1983-2007) A: Espejo B: UAMIZ 6 C: CHP 14 D: ih = 4.9%
- 158.- Espinosa García, Francisco Javier (1977-1980) A: F.J. Espinosa B: MEXU 3 C: MEX 3 D: ih = 4.3%
- 159.- Espinosa Garduño, Judith (1964-1986) A: J. Espinosa B: IEB 4 C: MIC 3 D: ih = 3.6%
- 160.- Espinosa Jiménez, Josefa Anahí (2007-2009) A: not an author B: MEXU 3 C: CHP 1 D: ih < 1%
- 161.- Estrada Castillón, Andrés Eduardo (1984-2005) A: not an author B: CFNL 5 C: NLE 2 D: ih = 1.6%
- 162.- Farrera Sarmiento, Oscar (1991-1999) A: not an author B: CHIP 3 C: CHP 1 D: ih = 4.7%
- 163.- Faust, Betty (1992-1998) A: not an author B: CICY 2 C: CAM 1 D: ih < 1%
- 164.- Feddema, Charles (1959-1963) A: Feddema B: LL-TEX 5 C: NAY 4 D: ih = 1.9%
- 165.- Felger, Richard Stephen (1954-2001) A: Felger B: ARIZ 6 C: SON 4 D: ih < 1%
- 166.- Fernández Nava, Rafael (1979-1994) A: R. Fernández B: IEB 7 C: QUE 8 D: ih = 5.6%
- 167.- Ferrer Ferrer, Victor Manuel (2010-2010) A: not an author B: INFyS 1 C: OAX 5 D: ih < 1%
- 168.- Figueroa Brito, Sandra (2002-2003) A: not an author B: MEXU 1 C: OAX 1 D: ih < 1%

- 169.- Fishbein, Mark E. (1992-1998) A: not an author B: ARIZ 3 C: SON 3 D: ih = 1.2%
- 170.- Fisher, George Lewis (1924-1944) A: not an author B: MO 4 C: VER 7 D: ih < 1%
- 171.- Flores Franco, Gabriel (1986-2014) A: G. Flores B: MEXU 7 C: NAY 8 D: ih < 1%
- 172.- Flores Granados, Celia (1971-1984) A: not an author B: XAL 1 C: ROO 3 D: ih < 1%
- 173.- Flores Guido, José Salvador (1981-1994) A: not an author B: CICY 5 C: YUC 3 D: ih = 2.8%
- 174.- Flores Muñoz, Alejandro (1984-1997) A: not an author B: IEB 5 C: JAL 4 D: ih = 7.1%
- 175.- Fonseca Juárez, Rosa María (1980-1999) A: not an author B: MEXU 3 C: GRO 1 D: ih = 1.1%
- 176.- Fortoul Velasco, Alberto Jorge (2010-2010) A: not an author B: INFyS 1 C: JAL 10 D: ih < 1%
- 177.- Fryxell, Paul Arnold (1968-1982) A: Fryxell B: MEXU 5 C: SLP 5 D: ih < 1%
- 178.- Galeotti, Henri Guillaume (1840-1840) A: Galeotti B: XAL 4 C: VER 3 D: ih = 2.2%
- 179.- Gallardo Hernández, Claudia (1989-2003) A: not an author B: MEXU 5 C: OAX 4 D: ih = 2.4%
- 180.- Galván Villanueva, Raquel (1979-1992) A: Galván B: IEB 5 C: GUA 4 D: ih = 2.1%
- 181.- García Arévalo, Abel (1997-1999) A: García-Arév. B: INECOL-CRD 2 C: DUR 3 D: ih = 1.5%
- 182.- García García, José (1986-1998) A: not an author B: IEB 1 C: MIC 1 D: ih < 1%
- 183.- García López, Eustolia (1986-1991) A: not an author B: IEB 2 C: MIC 1 D: ih < 1%
- 184.- García Mendoza, Abisai Josué (1981-2014) A: García-Mend. B: MEXU 6 C: OAX 14 D: ih = 8.9%
- 185.- García Pérez, José D. (1975-1984) A: García-Pérez B: MO 6 C: MEX 8 D: ih < 1%
- 186.- García Regalado, Gerardo (1984-2013) A: not an author B: HUAA 1 C: AGU 1 D: ih = 1.3%
- 187.- García Ruiz, Ignacio (1992-1996) A: I. García B: CIMI 2 C: MIC 1 D: ih < 1%
- 188.- García Sánchez, Saúl (2010-2010) A: not an author B: INFyS 1 C: OAX 5 D: ih < 1%
- 189.- García, Rufina (2006-2007) A: not an author B: [NOT IDENTIFIED] 0 C: OAX 1 D: ih < 1%
- 190.- Gaumer, George Franklin (1888-1917) A: not an author B: MO 7 C: YUC 3 D: ih < 1%
- 191.- Gentry, Alwin Howard (1981-1991) A: A.H. Gentry B: MO 2 C: VER 4 D: ih = 4.4%
- 192.- Gentry, Howard Scott (1933-1975) A: Gentry B: MEXU 10 C: SIN 16 D: ih = 1.6%
- 193.- Germán Ramírez, María Teresa (1974-1979) A: Germán B: MEXU 1 C: GRO 2 D: ih < 1%
- 194.- Gernandt, David Sebastian (2003-2015) A: not an author B: MEXU 1 C: HID 1 D: ih < 1%
- 195.- Goettsch Cabello, Bárbara (1998-2005) A: not an author B: MEXU 1 C: SLP 3 D: ih < 1%
- 196.- Gold, Dudley Blackburn (1951-1968) A: not an author B: MEXU 1 C: CMX 3 D: ih = 7.2%
- 197.- Gómez Chagala, Braulio (2007-2010) A: not an author B: MEXU 3 C: PUE 2 D: ih = 1.1%
- 198.- Gómez Domínguez, Héctor (2002-2011) A: not an author B: MEXU 3 C: CHP 1 D: ih < 1%
- 199.- Gómez Hinostrosa, Carlos (1995-2007) A: C. Gómez-Hinostrosa B: MEXU 4 C: SLP 4 D: ih < 1%
- 200.- Gómez Marín, Martín (2010-2010) A: not an author B: INFyS 1 C: MIC 6 D: ih < 1%
- 201.- Gómez Pompa, Arturo (1956-1978) A: Gómez Pompa B: XAL 4 C: VER 5 D: ih > 10%
- 202.- Gómez Santiz, Feliciano (1988-1997) A: not an author B: ECO-SC-H 6 C: CHP 1 D: ih > 10%
- 203.- Góngora Arones, Eleuterio (1982-1983) A: not an author B: CICY 3 C: CAM 3 D: ih = 3.8%
- 204.- González Elizondo, María del Socorro (1976-2005) A: S. González B: CIIDIR 6 C: DUR 2 D: ih = 4.4%
- 205.- González Elizondo, Martha (1980-2014) A: M. González B: CIIDIR 0 C: DUR 0 D: ih > 10%
- 206.- González Espinosa, Mario (1982-1994) A: not an author B: MEXU 5 C: CHP 2 D: ih > 10%
- 207.- González Hidalgo, Beatriz (1997-1998) A: not an author B: FCME 2 C: GRO 2 D: ih < 1%
- 208.- González Leija, Luis Armando (1960-1966) A: not an author B: MEXU 3 C: VER 2 D: ih = 2.5%
- 209.- González Medrano, Francisco (1963-1993) A: Medrano B: MEXU 7 C: TAM 12 D: ih = 2.2%
- 210.- González Ortega, Jesús (1922-1922) A: J.G. Ortega B: MEXU 2 C: SIN 1 D: ih < 1%
- 211.- González Ponce, Erasmo (1988-1990) A: not an author B: IEB 4 C: QUE 1 D: ih = 3.1%
- 212.- González Quintero, Lauro (1963-1966) A: not an author B: ENCB 5 C: HID 3 D: ih = 2.1%
- 213.- González Quintero, Unberto (1992-2000) A: not an author B: MEXU 1 C: GRO 1 D: ih < 1%
- 214.- González Villarreal, Luz María (1981-1991) A: L.M. González B: MEXU 4 C: JAL 1 D: ih = 3.4%
- 215.- Gould, Frank Walton (1952-1968) A: Gould B: US 4 C: COA 4 D: ih < 1%
- 216.- Graham, George John (1959-1959) A: not an author B: LL-TEX 2 C: TAM 3 D: ih < 1%
- 217.- Gregg, Josiah (1847-1848) A: not an author B: MO 1 C: COA 5 D: ih < 1%
- 218.- Grether González, Rosaura (1976-1989) A: R. Grether B: MEXU 1 C: CHP 5 D: ih < 1%
- 219.- Guadarrama Olivera, María de los Ángeles (1983-1999) A: not an author B: MEXU 4 C: TAB 1 D: ih = 1.8%
- 220.- Gual Díaz, Martha (1990-1995) A: Gual B: FCME 2 C: GRO 1 D: ih = 2.2%
- 221.- Guerrero Campanur, Bruno (1979-1983) A: not an author B: XAL 3 C: MIC 3 D: ih = 1.2%
- 222.- Guízar Nolasco, Enrique (1977-2001) A: not an author B: CHAP 5 C: PUE 12 D: ih = 5.1%
- 223.- Gutiérrez Báez, Celso (1981-2006) A: not an author B: XAL 7 C: VER 4 D: ih = 2.4%
- 224.- Gutiérrez Gabriel, Gustavo (2004-2005) A: not an author B: [NOT IDENTIFIED] 0 C: ROO 1 D: ih < 1%

- 225.- Guzmán Cortés, Naldo (2010-2010) A: not an author B: INFyS 1 C: HID 4 D: ih < 1%
- 226.- Guzmán Cruz, Leonardo Ulises (1990-2012) A: U. Guzmán B: FESI 2 C: QUE 7 D: ih = 1.6%
- 227.- Guzmán Hernández, Luis (1988-1997) A: not an author B: ZEA 1 C: JAL 2 D: ih < 1%
- 228.- Guzmán Mejía, Rafael (1976-1983) A: R. Guzmán B: MEXU 4 C: JAL 4 D: ih < 1%
- 229.- Hampshire, Rachel Jane (1990-1990) A: not an author B: MEXU 3 C: CHP 1 D: ih < 1%
- 230.- Hanan Alipi, Ana María (1988-1999) A: Hanan-Alipi B: MEXU 1 C: TAB 3 D: ih < 1%
- 231.- Hansen, Bruce Frederick (1973-1980) A: B.F. Hansen B: XAL 5 C: VER 5 D: ih = 1.5%
- 232.- Harvey, LeRoy Hatfield (1939-1972) A: L.H. Harv. B: US 2 C: CHH 3 D: ih < 1%
- 233.- Hastings, James Rodney (1963-1971) A: not an author B: ARIZ 2 C: SON 3 D: ih < 1%
- 234.- Hawkes, John Gregory (1949-1958) A: Hawkes B: [NOT IDENTIFIED] 1 C: MIC 1 D: ih < 1%
- 235.- Heath, Melanie (1989-1990) A: not an author B: CHIP 5 C: CHP 1 D: ih = 9.9%
- 236.- Henrickson, James Solberg (1966-2002) A: Henr. B: LL-TEX 5 C: COA 7 D: ih < 1%
- 237.- Hernández Álvarez, Faustino (1984-1994) A: not an author B: UAS 2 C: SIN 1 D: ih < 1%
- 238.- Hernández Cárdenas, Rodrigo Alejandro (1992-2014) A: not an author B: IEB 2 C: QUE 3 D: ih < 1%
- 239.- Hernández González, Heriberto (1984-1987) A: not an author B: MO 2 C: OAX 1 D: ih < 1%
- 240.- Hernández Macías, Héctor Manuel (1983-2005) A: H.M. Hern. B: MEXU 2 C: SLP 7 D: ih < 1%
- 241.- Hernández Magaña, Rafael (1965-2005) A: not an author B: MEXU 8 C: HID 11 D: ih < 1%
- 242.- Hernández Najarro, Francisco (1999-2004) A: not an author B: HEM 2 C: CHP 1 D: ih = 2.4%
- 243.- Hernández Sandoval, Luis Gerardo (1983-2007) A: L. Hern. B: QMEX 6 C: TAM 3 D: ih = 1.8%
- 244.- Hernández Vera, Diego Guillermo (2010-2010) A: not an author B: INFyS 1 C: DUR 1 D: ih < 1%
- 245.- Hernández-Xolocotzi Guzmán, Efraím Ildelfonso (1943-1980) A: Hern.-Xol. B: URG-BGM 6 C: CHP 18 D: ih = 8.8%
- 246.- Herrera Arrieta, Yolanda (1981-2000) A: Y. Herrera B: CIIDIR 4 C: DUR 2 D: ih > 10%
- 247.- Hinton, George Boole (1931-1943) A: not an author B: MO 14 C: MEX 10 D: ih = 4.6%
- 248.- Hinton, George Sebastian (1996-2010) A: G.S. Hinton B: GBH 2 C: NLE 3 D: ih < 1%
- 249.- Hinton, James C. (1944-1995) A: not an author B: MO 2 C: NLE 5 D: ih < 1%
- 250.- Hiriart Valencia, Patricia (1984-1985) A: Hiriart B: MEXU 1 C: TAM 3 D: ih < 1%
- 251.- Hitchcock, Albert Spear (1908-1910) A: Hitchc. B: US 3 C: VER 20 D: ih < 1%
- 252.- Huerta Badillo, Victor Manuel (1985-1992) A: not an author B: IEB 2 C: MIC 3 D: ih = 1.1%
- 253.- Hughes, Colin Edward (1985-2001) A: not an author B: MEXU 4 C: OAX 6 D: ih = 5.1%
- 254.- Hunn, Eugene Stuart (1996-1998) A: not an author B: MEXU 2 C: OAX 1 D: ih < 1%
- 255.- Ibarra Contreras, Gerardo (1978-2002) A: not an author B: MEXU 2 C: VER 3 D: ih = 2.3%
- 256.- Ibarra Manríquez, Guillermo (1981-2015) A: Ibarra-Manr. B: MEXU 5 C: VER 9 D: ih = 4.4%
- 257.- Iltis, Hugh Hellmut (1960-1992) A: H.H. Iltis B: MEXU 9 C: JAL 8 D: ih > 10%
- 258.- Ishiki Ishihara, Mario (1985-1999) A: not an author B: MEXU 3 C: OAX 2 D: ih = 1.6%
- 259.- Izaguirre Yáñez, Gilberto Rafael (2010-2010) A: not an author B: INFyS 1 C: OAX 2 D: ih < 1%
- 260.- Jacob Salinas, María Esther (2006-2007) A: not an author B: MEXU 1 C: OAX 1 D: ih < 1%
- 261.- Jasso Torres, María Josefa (1988-1990) A: not an author B: IEB 3 C: MIC 1 D: ih = 1.8%
- 262.- Jenkins, Philip D. (1988-1993) A: P.D. Jenkins B: ARIZ 1 C: SON 2 D: ih > 10%
- 263.- Johnston, Ivan Murray (1921-1941) A: I.M. Johnst. B: LL-TEX 7 C: COA 4 D: ih = 2.0%
- 264.- Johnston, Marshall Conring (1946-1973) A: M.C. Johnst. B: LL-TEX 6 C: COA 8 D: ih = 1.1%
- 265.- Jones, Marcus Eugene (1926-1930) A: M.E. Jones B: MO 4 C: BCS 6 D: ih = 5.1%
- 266.- Joyal, Elaine (1990-1992) A: not an author B: MEXU 3 C: SON 1 D: ih = 1.4%
- 267.- Juárez Delgado, Juan Carlos (1994-2003) A: not an author B: HUMO 1 C: CHP 1 D: ih = 4.0%
- 268.- Juárez García, Gonzalo (2003-2007) A: not an author B: MEXU 1 C: OAX 1 D: ih < 1%
- 269.- Juárez Palmillas, José Rito (1993-2000) A: not an author B: MEXU 1 C: CAM 1 D: ih < 1%
- 270.- Judziewicz, Emmet J. (1981-1985) A: Judz. B: XAL 4 C: JAL 3 D: ih < 1%
- 271.- Kantun Briseño, Santiago (2010-2010) A: not an author B: INFyS 1 C: YUC 3 D: ih < 1%
- 272.- Keil, David John (1971-1983) A: D.J. Keil B: LL-TEX 2 C: MIC 1 D: ih = 1.2%
- 273.- King, Robert Merrill (1958-1961) A: R.M. King B: LL-TEX 5 C: OAX 10 D: ih = 4.9%
- 274.- Kishler, Jean (1977-1984) A: not an author B: MEXU 1 C: GUA 2 D: ih < 1%
- 275.- Knobloch, Irving William (1957-1958) A: Knobloch B: LL-TEX 3 C: CHH 1 D: ih < 1%
- 276.- Koch, Stephen Douglas (1973-1989) A: S.D. Koch B: MEXU 10 C: MEX 7 D: ih = 3.2%
- 277.- Krömer, Thorsten (2005-2010) A: not an author B: MEXU 1 C: VER 1 D: ih < 1%
- 278.- Kruse, Hubert (1959-1973) A: not an author B: MEXU 4 C: GRO 1 D: ih = 3.2%
- 279.- Labat, Jean Noël (1983-1994) A: not an author B: MEXU 3 C: MIC 2 D: ih < 1%
- 280.- Laferrière, Joseph Edward (1987-1988) A: Laferr. B: MEXU 4 C: CHH 1 D: ih = 2.0%

- 281.- Lamothe Argumedo, Marcos Rafael (1968-1976) A: not an author B: MEXU 0 C: MEX 0 D: ih < 1%
- 282.- Lane, Meredith A. (1976-1979) A: M.A. Lane B: LL-TEX 1 C: CHH 1 D: ih = 1.3%
- 283.- Laughlin, Robert Moody (1966-1966) A: not an author B: MEXU 7 C: CHP 1 D: ih < 1%
- 284.- Lavin, Matt (1984-1985) A: Lavin B: LL-TEX 2 C: NLE 3 D: ih < 1%
- 285.- Lebgue, Toutcha (1998-2000) A: not an author B: FZUACH 1 C: CHH 1 D: ih < 1%
- 286.- Ledesma Corral, Jaime Canek (2007-2011) A: not an author B: INFyS 3 C: OAX 3 D: ih < 1%
- 287.- León de la Luz, José Luis (1979-2011) A: León de la Luz B: HCIB 3 C: BCS 3 D: ih = 2.5%
- 288.- LeSueur, Hardeman David (1935-1939) A: not an author B: LL-TEX 6 C: CHH 3 D: ih > 10%
- 289.- Levy Tacher, Samuel (1994-1997) A: not an author B: MEXU 2 C: CHP 1 D: ih > 10%
- 290.- Liebmman, Frederik Michael (1841-1842) A: Liebm. B: US 4 C: VER 4 D: ih = 4.0%
- 291.- Linares Mazari, Edelmira (1992-2004) A: Linares B: MEXU 1 C: MEX 1 D: ih < 1%
- 292.- Linden, Jean Jules (1838-1840) A: Linden B: XAL 3 C: VER 1 D: ih = 5.3%
- 293.- Lira Charco, Erika Melinda (1997-2002) A: not an author B: MEXU 2 C: CAM 1 D: ih < 1%
- 294.- Lira Saade, Rafael (1980-1999) A: Lira B: MEXU 5 C: OAX 4 D: ih = 2.4%
- 295.- Lizama Manrique, José Marcial (1993-2000) A: not an author B: CIB 3 C: VER 1 D: ih < 1%
- 296.- López Cruz, Angelita (2005-2010) A: not an author B: HEM 3 C: CHP 1 D: ih < 1%
- 297.- López Estudillo, Rigoberto (1984-1991) A: not an author B: USON 1 C: SON 1 D: ih < 1%
- 298.- López Ferrari, Ana Rosa (1988-1994) A: López-Ferrari B: UAMIZ 2 C: CHP 4 D: ih = 5.2%
- 299.- López García, José Luis (1992-1997) A: not an author B: CHAP 3 C: HID 2 D: ih > 10%
- 300.- López Luna, Ricardo (1987-1990) A: not an author B: MEXU 2 C: OAX 1 D: ih < 1%
- 301.- López Molina, María Evangelina (1998-1999) A: not an author B: HEM 3 C: CHP 1 D: ih < 1%
- 302.- López Pascual, Dionisio (2010-2012) A: not an author B: MEXU 1 C: OAX 1 D: ih < 1%
- 303.- López Peralta, Efraín (2002-2003) A: not an author B: XAL 2 C: VER 1 D: ih < 1%
- 304.- López-Forment Conradt, William (1975-1981) A: not an author B: MEXU 2 C: GRO 3 D: ih < 1%
- 305.- Lorea Hernández, Francisco Gerardo (1980-1990) A: Lorea-Hern. B: IEB 3 C: GRO 1 D: ih = 1.4%
- 306.- Lorence, David Harold (1980-1986) A: Lorence B: MEXU 3 C: OAX 3 D: ih = 1.6%
- 307.- Lot Helgueras, Antonio (1969-1984) A: not an author B: MEXU 5 C: VER 5 D: ih > 10%
- 308.- Lott, Emily Jane (1980-2009) A: E.J. Lott B: MEXU 8 C: JAL 4 D: ih = 3.4%
- 309.- Lozada Pérez, Lucio (1984-1991) A: Lozada-Pérez B: MEXU 4 C: GRO 1 D: ih < 1%
- 310.- Luckow, Melissa A. (1958-1987) A: Luckow B: LL-TEX 3 C: OAX 6 D: ih < 1%
- 311.- Luna Martínez, Rodrigo (2010-2010) A: not an author B: INFyS 1 C: JAL 8 D: ih < 1%
- 312.- Luna Monterrojo, Víctor Elias (1981-1994) A: not an author B: XAL 3 C: VER 1 D: ih = 1.4%
- 313.- Luna Vega, Mercedes Isolda (1991-1995) A: not an author B: FCME 2 C: HID 1 D: ih = 4.4%
- 314.- Lundell, Cyrus Longworth (1931-1964) A: Lundell B: LL-TEX 8 C: YUC 6 D: ih = 2.7%
- 315.- Lyonnet, Ernest (1924-1957) A: not an author B: MEXU 7 C: MOR 10 D: ih = 2.8%
- 316.- MacDougall, Thomas Baillie (1951-1972) A: T. MacDoug. B: MEXU 5 C: OAX 2 D: ih = 2.0%
- 317.- Machuca Nuño, José Antonio (1986-1996) A: not an author B: XAL 4 C: JAL 1 D: ih = 2.1%
- 318.- Madrid Nava, Estela (1997-1998) A: not an author B: MEXU 3 C: CAM 1 D: ih = 1.1%
- 319.- Madrigal Sánchez, Xavier (1959-2004) A: Madrigal B: INIF 5 C: MIC 4 D: ih = 4.2%
- 320.- Magaña Alejandro, Miguel Angel (1979-1995) A: not an author B: MEXU 6 C: TAB 2 D: ih = 6.2%
- 321.- Mancera Orozco, Ángel (1970-1981) A: not an author B: INIF 2 C: MIC 4 D: ih = 6.0%
- 322.- Márquez Ramírez, Wilfrido (1972-1977) A: not an author B: XAL 5 C: VER 2 D: ih = 2.6%
- 323.- Marroquín de la Fuente, Jorge Saúl (1961-1963) A: Marroq. B: INIF 2 C: NLE 4 D: ih < 1%
- 324.- Marsh, Ernest George, Jr. (1935-1939) A: not an author B: LL-TEX 2 C: COA 1 D: ih = 1.3%
- 325.- Martin, Gary John (1980-1987) A: not an author B: MEXU 1 C: OAX 1 D: ih < 1%
- 326.- Martin, Paul Stephan (1960-1993) A: not an author B: ARIZ 3 C: SON 3 D: ih < 1%
- 327.- Martínez Ávalos, José Guadalupe (1993-1995) A: Mart.-Ávalos B: UAT 1 C: TAM 1 D: ih < 1%
- 328.- Martínez Calderón, Guadalupe (1965-1970) A: not an author B: MEXU 5 C: VER 2 D: ih = 7.0%
- 329.- Martínez Camilo, Rubén (2001-2015) A: not an author B: HEM 1 C: CHP 1 D: ih = 1.6%
- 330.- Martínez Cruz, Juan (1997-2005) A: not an author B: MEXU 1 C: GUA 2 D: ih < 1%
- 331.- Martínez Gordillo, Martha Juana (1993-1997) A: Mart. Gord. B: FCME 2 C: GRO 1 D: ih < 1%
- 332.- Martínez Hernández, José Luis (2010-2010) A: not an author B: INFyS 1 C: SON 2 D: ih < 1%
- 333.- Martínez Icó, Miguel (1994-1997) A: not an author B: MEXU 3 C: CHP 1 D: ih > 10%
- 334.- Martínez López, Adolfo (1985-1986) A: not an author B: IEB 2 C: MIC 1 D: ih = 3.9%
- 335.- Martínez Márquez, Juan Santos (1985-1987) A: not an author B: IEB 6 C: MIC 2 D: ih = 1.5%
- 336.- Martínez Martínez, Ignacio (2010-2010) A: not an author B: INFyS 1 C: OAX 1 D: ih < 1%

- 337.- Martínez Meléndez, Jorge (2002-2009) A: not an author B: MEXU 3 C: CHP 1 D: ih < 1%
- 338.- Martínez Meléndez, Nayely (2002-2009) A: not an author B: MEXU 2 C: CHP 1 D: ih < 1%
- 339.- Martínez Pérez, José Luis (1985-1988) A: not an author B: XAL 3 C: VER 2 D: ih > 10%
- 340.- Martínez Ramírez, Cipriano (1984-2001) A: not an author B: MEXU 4 C: OAX 1 D: ih > 10%
- 341.- Martínez Romero, Martha (1993-1995) A: not an author B: MEXU 1 C: PUE 1 D: ih < 1%
- 342.- Martínez Salas, Esteban Manuel (1977-2016) A: E. Martínez B: MEXU 18 C: CHP 14 D: ih = 3.8%
- 343.- Martínez y Díaz de Salas, Mahinda Luisa Fernanda (1984-2012) A: M. Martínez B: QMEX 6 C: TAM 3 D: ih = 1.4%
- 344.- Martínez y Martínez, Maximino (1938-1955) A: Martínez B: MEXU 1 C: HID 4 D: ih = 10.0%
- 345.- Matuda, Eizi (1936-1977) A: Matuda B: MEXU 14 C: CHP 14 D: ih = 5.4%
- 346.- May Nah, Agustín (1962-1970) A: not an author B: INIF 3 C: PUE 4 D: ih = 1.6%
- 347.- May Pat, Filogonio (1983-2002) A: not an author B: CICY 3 C: YUC 3 D: ih < 1%
- 348.- Maya Jiménez, Salomón (1984-1987) A: not an author B: MEXU 4 C: OAX 1 D: ih < 1%
- 349.- Mayfield, Mark Hasslock (1989-1994) A: Mayfield B: LL-TEX 2 C: CHH 5 D: ih = 1.5%
- 350.- Mayorga Saucedo, Rafael (1996-2000) A: not an author B: FCME 2 C: HID 1 D: ih = 2.0%
- 351.- Maysilles, James Howard (1950-1955) A: not an author B: MEXU 3 C: DUR 1 D: ih = 2.2%
- 352.- McVaugh, Rogers (1949-1990) A: McVaugh B: MEXU 9 C: JAL 13 D: ih = 3.3%
- 353.- Meave del Castillo, Jorge Arturo (1981-2003) A: not an author B: MEXU 3 C: OAX 2 D: ih = 1.5%
- 354.- Medellín Leal, Fernando (1954-1962) A: Medellín-Leal B: ENCB 2 C: SLP 2 D: ih = 2.7%
- 355.- Medina Abreu, María Elena (1985-1994) A: M.E. Medina B: XAL 5 C: VER 2 D: ih > 10%
- 356.- Medina Cota, José Miguel (1975-1989) A: Medina-Cota B: ENCB 5 C: HID 2 D: ih = 9.7%
- 357.- Medina García, Consuelo (1987-1996) A: not an author B: IEB 3 C: MIC 1 D: ih < 1%
- 358.- Medina Lemos, Rosalinda (1982-2013) A: Medina B: MEXU 1 C: PUE 3 D: ih < 1%
- 359.- Mejía Escárcega, Héctor (1995-1995) A: not an author B: MEXU 2 C: CHP 1 D: ih = 1.4%
- 360.- Mejía Márquez, Martín (2009-2015) A: not an author B: HEM 1 C: CHP 1 D: ih < 1%
- 361.- Mejía Soules, María Teresa (1979-1986) A: not an author B: XAL 1 C: VER 1 D: ih < 1%
- 362.- Meléndez López, Emerit (2002-2004) A: not an author B: MEXU 2 C: CHP 1 D: ih < 1%
- 363.- Meling, Ada (1986-1986) A: not an author B: USON 1 C: SON 1 D: ih < 1%
- 364.- Méndez García, Martha (1991-2003) A: not an author B: CICY 3 C: YUC 3 D: ih < 1%
- 365.- Méndez Girón (Alush Shilom Tom), Alonso (1964-1990) A: not an author B: MEXU 12 C: CHP 1 D: ih = 5.8%
- 366.- Mendoza Ruiz, Aniceto (1994-2007) A: A. Mend. B: IEB 3 C: OAX 3 D: ih < 1%
- 367.- Meráz Cárdenas, Mario (2010-2010) A: not an author B: INFyS 1 C: SON 2 D: ih < 1%
- 368.- Mexia, Ynés Enriqueta Julietta (1926-1938) A: not an author B: MO 6 C: SIN 5 D: ih = 3.1%
- 369.- Meyer, Frederick Gustav (1948-1948) A: F.G. Mey. B: L 2 C: NLE 2 D: ih < 1%
- 370.- Mickel, John Thomas (1960-1973) A: Mickel B: MEXU 4 C: OAX 1 D: ih < 1%
- 371.- Miller, James Spencer (1982-1992) A: J.S. Miller B: MO 2 C: GRO 9 D: ih < 1%
- 372.- Miranda Colín, Salvador (1966-1966) A: S. Miranda B: INIFAP-CG 1 C: PUE 2 D: ih < 1%
- 373.- Miranda González, Faustino Antonio (1940-1960) A: Miranda B: MEXU 5 C: CHP 12 D: ih = 1.5%
- 374.- Miranda Moreno, Andrés Gelacio (1998-2002) A: not an author B: CHAP 2 C: OAX 4 D: ih < 1%
- 375.- Miranda Sánchez, Javier Alejandro (1985-2001) A: not an author B: MEXU 3 C: PUE 4 D: ih < 1%
- 376.- Monroy de la Rosa, Mario Alberto (1994-1994) A: not an author B: FCME 2 C: GRO 1 D: ih < 1%
- 377.- Monsalvo Reyes, Alejandro Cruz (2000-2000) A: not an author B: IZTA 1 C: PUE 1 D: ih < 1%
- 378.- Monsiváis Vázquez, Armando (2010-2010) A: not an author B: INFyS 1 C: TAM 1 D: ih < 1%
- 379.- Moore, Harold Emery, Jr. (1940-1961) A: H.E. Moore B: MEXU 3 C: HID 4 D: ih < 1%
- 380.- Mora Olivo, Arturo (1985-2001) A: Mora-Olivo B: UAT 2 C: TAM 2 D: ih < 1%
- 381.- Moran, Reid Venable (1952-1982) A: Moran B: SD 11 C: BCN 3 D: ih = 2.2%
- 382.- Moreno Casasola, Patricia (1975-1983) A: not an author B: MEXU 2 C: ROO 2 D: ih = 9.6%
- 383.- Morin Valdés, Carlos (1998-1998) A: not an author B: IZTA 1 C: PUE 1 D: ih < 1%
- 384.- Mueller, Cornelius Herman (1933-1951) A: C.H. Müell. B: LL-TEX 3 C: NLE 2 D: ih > 10%
- 385.- Mukul Pech, Federico (2010-2010) A: not an author B: INFyS 1 C: YUC 2 D: ih < 1%
- 386.- Muller, Katherine Kinsel (1939-1951) A: not an author B: LL-TEX 2 C: NLE 3 D: ih < 1%
- 387.- Munn Estrada, Xóchitl (1996-2002) A: not an author B: [NOT IDENTIFIED] 2 C: OAX 1 D: ih < 1%
- 388.- Nagel, Otto (1932-1937) A: not an author B: US 5 C: CHP 5 D: ih > 10%
- 389.- Nárrave Fernández, Héctor (1981-1984) A: not an author B: XAL 3 C: VER 3 D: ih < 1%
- 390.- Narváez Segovia, Miguel (1980-1984) A: not an author B: CICY 4 C: YUC 3 D: ih = 2.6%
- 391.- Nava Zafra, Arturo (2003-2007) A: A. Nava B: MEXU 3 C: OAX 1 D: ih = 1.2%
- 392.- Navarro Galván, Luis Hiram (2010-2010) A: not an author B: INFyS 1 C: CHH 1 D: ih < 1%

- 393.- Navarro Martínez, María Angélica (1991-1998) A: not an author B: MEXU 1 C: JAL 1 D: ih < 1%
- 394.- Nee, Michael Harley (1967-1986) A: M. Nee B: XAL 11 C: VER 8 D: ih = 1.6%
- 395.- Neff, John L. (1991-1993) A: not an author B: LL-TEX 2 C: CHP 3 D: ih < 1%
- 396.- Nelson, Edward William (1894-1903) A: not an author B: US 3 C: OAX 4 D: ih = 3.6%
- 397.- Nesom, Guy Lane (1977-1994) A: G.L. Nesom B: LL-TEX 4 C: CHH 5 D: ih = 3.3%
- 398.- Nevling, Lorin Ives (1967-1971) A: Nevling B: XAL 3 C: VER 1 D: ih < 1%
- 399.- Novelo Retana, Luis Alejandro (1975-2005) A: Novelo B: MEXU 6 C: TAB 13 D: ih > 10%
- 400.- Ochoa Gaona, Susana (1973-1994) A: not an author B: CHIP 5 C: CHP 1 D: ih > 10%
- 401.- Orcutt, Charles Russell (1886-1910) A: Orcutt B: MO 6 C: BCN 7 D: ih < 1%
- 402.- Ornelas Uribe, Ricardo (1986-1988) A: not an author B: IEB 5 C: JAL 1 D: ih = 3.2%
- 403.- Orozco Lázaro, Pascual de Jesús (2010-2010) A: not an author B: INFyS 1 C: YUC 6 D: ih < 1%
- 404.- Orozco Segovia, Alma Delfina Lucía (1973-1976) A: not an author B: XAL 3 C: VER 2 D: ih > 10%
- 405.- Ortega Ortiz, Roberto Venancio (1975-1984) A: R.V. Ortega B: XAL 5 C: VER 3 D: ih = 2.4%
- 406.- Ortega Torres, Luz María (1987-1991) A: not an author B: XAL 3 C: VER 3 D: ih = 3.7%
- 407.- Ortiz Díaz, Juan Javier (1982-2003) A: J.J. Ortiz B: XAL 4 C: CAM 4 D: ih = 3.9%
- 408.- Palacios Espinosa, Eduardo (1986-2000) A: not an author B: CHIP 3 C: CHP 1 D: ih = 6.7%
- 409.- Palacios Ríos, Mónica (1982-1990) A: not an author B: XAL 1 C: VER 2 D: ih = 2.3%
- 410.- Palma Gutiérrez, Jesús (1980-1986) A: not an author B: XAL 3 C: VER 2 D: ih = 2.0%
- 411.- Palmer, Edward (1875-1910) A: Palmer B: US 12 C: DUR 16 D: ih > 10%
- 412.- Panero Estévez, José Luis (1989-1999) A: Panero B: LL-TEX 4 C: OAX 8 D: ih = 5.1%
- 413.- Panti Madero, Miguel Angel (1980-1980) A: not an author B: MEXU 1 C: CMX 1 D: ih < 1%
- 414.- Pantoja Hernández, Yolanda (2000-2009) A: not an author B: QMEX 2 C: QUE 2 D: ih = 1.4%
- 415.- Paray Polnik, Ladislao (1950-1961) A: Paray B: ENCB 3 C: MEX 6 D: ih = 2.7%
- 416.- Parra Pérez, Genaro (2010-2010) A: not an author B: INFyS 1 C: DUR 2 D: ih < 1%
- 417.- Parry, Charles Christopher (1878-1878) A: not an author B: MO 2 C: SLP 1 D: ih < 1%
- 418.- Pascual Cortéz, José (2001-2006) A: not an author B: MEXU 4 C: OAX 1 D: ih < 1%
- 419.- Patterson, Thomas Frederick (1988-1998) A: T.F. Patt. B: LL-TEX 1 C: NLE 2 D: ih < 1%
- 420.- Pennell, Francis Whittier (1934-1935) A: Pennell B: MEXU 3 C: SLP 5 D: ih < 1%
- 421.- Pennington, Terence Dale (1967-1976) A: T.D. Penn. B: MEXU 3 C: VER 3 D: ih = 2.4%
- 422.- Pérez Calix, Emmanuel (1988-2002) A: E. Pérez-Calix B: IEB 3 C: MIC 4 D: ih = 3.3%
- 423.- Pérez Farrera, Miguel Angel (1994-2006) A: not an author B: HEM 3 C: CHP 1 D: ih < 1%
- 424.- Pérez García, Eduardo Alberto (1995-2003) A: Pérez-García B: MEXU 2 C: OAX 1 D: ih < 1%
- 425.- Pérez García, Salvador (2010-2010) A: not an author B: INFyS 1 C: OAX 1 D: ih < 1%
- 426.- Pérez Jiménez, Luis Alfredo (1969-1980) A: Pérez-Jiménez B: MEXU 1 C: JAL 2 D: ih < 1%
- 427.- Pérez Martínez, Oscar de Jesús (2010-2010) A: not an author B: INFyS 1 C: JAL 2 D: ih < 1%
- 428.- Pérez Navarro, José Juan (1994-2002) A: not an author B: HCIB 1 C: BCS 1 D: ih < 1%
- 429.- Peterson, Paul M. (1985-2003) A: P.M. Peterson B: US 8 C: CHH 14 D: ih < 1%
- 430.- Pizarro Luco, Salvador Alejandro (2010-2010) A: not an author B: INFyS 1 C: DUR 2 D: ih < 1%
- 431.- Poole, Jackie M. (1978-1981) A: not an author B: LL-TEX 3 C: NLE 4 D: ih = 4.9%
- 432.- Powell, Albert Michael (1961-1973) A: A.M. Powell B: LL-TEX 2 C: CHH 3 D: ih < 1%
- 433.- Pringle, Cyrus Guernsey (1884-1909) A: Pringle B: MEXU 18 C: JAL 18 D: ih > 10%
- 434.- Provance, Mitch (2003-2003) A: not an author B: MO 1 C: VER 2 D: ih < 1%
- 435.- Puch Tzab, Armando (1980-1985) A: not an author B: CICY 4 C: YUC 3 D: ih = 4.5%
- 436.- Puig, Henri (1967-1979) A: not an author B: MEXU 2 C: TAM 5 D: ih < 1%
- 437.- Purpus, Carl Albert (1901-1934) A: Purpus B: MO 9 C: VER 10 D: ih > 10%
- 438.- Quero Rico, Hermilo Jorge (1974-1999) A: H.J. Quero B: MEXU 3 C: ROO 4 D: ih = 5.1%
- 439.- Quintero Obeso, Ramón Benjamín (2010-2010) A: not an author B: INFyS 1 C: SIN 1 D: ih < 1%
- 440.- Ramamoorthy, Thennilapuram Parasuramayer (1980-1985) A: Ramamoorthy B: MEXU 2 C: VER 7 D: ih < 1%
- 441.- Ramírez Delgadillo, Raymundo (1982-2014) A: R. Delgad. B: HUMO 4 C: CHP 4 D: ih = 7.6%
- 442.- Ramírez Guadarrama, Alejandra (1983-1995) A: not an author B: HUMO 2 C: CHP 2 D: ih = 4.1%
- 443.- Ramírez Prieto, Juan (2003-2012) A: not an author B: HUAZ 1 C: ZAC 1 D: ih < 1%
- 444.- Ramírez R., Francisco (1978-1989) A: not an author B: XAL 1 C: VER 1 D: ih < 1%
- 445.- Ramírez Rodríguez, Rolando (1988-1995) A: not an author B: MEXU 3 C: NAY 2 D: ih < 1%
- 446.- Ramos Álvarez, Clara Hilda (1967-2011) A: Ramos B: MEXU 5 C: VER 5 D: ih > 10%
- 447.- Ramos Ventura, Leandro Javier (1986-2015) A: not an author B: MEXU 1 C: TAB 3 D: ih < 1%
- 448.- Rebman, Jon Paul (1991-2003) A: Rebman B: BCMEX 5 C: BCN 2 D: ih = 1.5%

- 449.- Reed Domínguez, Miguel Armando (2010-2010) A: not an author B: INFyS 1 C: SIN 1 D: ih < 1%
- 450.- Reeder, John Raymond (1950-1987) A: not an author B: ARIZ 6 C: DUR 21 D: ih = 2.9%
- 451.- Reina Guerrero, Ana Lilia (1995-2010) A: not an author B: USON 8 C: SON 3 D: ih < 1%
- 452.- Rendón Aguilar, Beatriz (1995-2015) A: not an author B: UAMIZ 1 C: OAX 2 D: ih < 1%
- 453.- René Damián, Miguel (2010-2010) A: not an author B: INFyS 1 C: ROO 1 D: ih < 1%
- 454.- Reveal, James Lauritz (1971-1988) A: Reveal B: LL-TEX 4 C: DUR 5 D: ih < 1%
- 455.- Reyes Agüero, Juan Antonio (1989-2000) A: not an author B: MEXU 1 C: SLP 1 D: ih < 1%
- 456.- Reyes de los Santos, Enrique (1991-1999) A: not an author B: MEXU 1 C: YUC 1 D: ih = 1.9%
- 457.- Reyes García, Alberto Javier (1987-2004) A: not an author B: MEXU 4 C: CHP 2 D: ih = 2.8%
- 458.- Reyes Santiago, Panuncio Jerónimo (1988-1990) A: J. Reyes B: MEXU 1 C: OAX 1 D: ih < 1%
- 459.- Reynoso Dueñas, Jesús Jacqueline (1988-1994) A: Reynoso B: MEXU 2 C: JAL 1 D: ih < 1%
- 460.- Reynoso Santos, Roberto (2005-2010) A: not an author B: INFyS 2 C: CHP 1 D: ih < 1%
- 461.- Riba y Nava Esparza, Ramón (1960-1993) A: Riba B: MEXU 2 C: VER 3 D: ih = 3.4%
- 462.- Richardson, Alfred Thomas (1968-1971) A: A.T.Richardson B: LL-TEX 1 C: TAM 1 D: ih < 1%
- 463.- Rico Arce, María de Lourdes (1978-1993) A: L. Rico B: MEXU 3 C: OAX 2 D: ih = 2.7%
- 464.- Rico Gray, Victor (1980-1988) A: not an author B: CICY 3 C: YUC 4 D: ih = 5.9%
- 465.- Rico Rodríguez, Lilia (1982-1992) A: not an author B: MEXU 1 C: OAX 2 D: ih < 1%
- 466.- Rincón Gutiérrez, Armando Alberto (1993-2004) A: not an author B: MEXU 6 C: VER 3 D: ih = 6.1%
- 467.- Ripley, Harry Dwight Dillon (1963-1967) A: not an author B: NY 2 C: OAX 2 D: ih < 1%
- 468.- Riskind, David H. (1972-1981) A: not an author B: LL-TEX 1 C: COA 1 D: ih < 1%
- 469.- Rivera Hernández, Jaime Ernesto (1996-2013) A: not an author B: MEXU 4 C: OAX 3 D: ih < 1%
- 470.- Rivera Reyes, José (1986-1999) A: not an author B: MEXU 3 C: OAX 1 D: ih = 2.3%
- 471.- Robles González, Rafael (1986-1986) A: not an author B: XAL 2 C: VER 1 D: ih < 1%
- 472.- Robles Hernández, Luis (1983-1989) A: not an author B: XAL 3 C: VER 2 D: ih < 1%
- 473.- Rodríguez Contreras, Aarón (1985-2011) A: not an author B: IEB 4 C: JAL 5 D: ih = 1.1%
- 474.- Rodríguez Santamaría, Oscar (2010-2010) A: not an author B: INFyS 1 C: JAL 7 D: ih < 1%
- 475.- Roe, Keith Edward (1965-1965) A: K.E. Roe B: LL-TEX 4 C: MEX 4 D: ih = 1.4%
- 476.- Rojo Real, Rogelio (2010-2010) A: not an author B: INFyS 1 C: COA 3 D: ih < 1%
- 477.- Rosario Damián, Luis Ramón (2010-2010) A: not an author B: INFyS 1 C: ROO 1 D: ih < 1%
- 478.- Rosas Reyes, Marino (1966-1969) A: not an author B: XAL 4 C: VER 1 D: ih = 1.4%
- 479.- Rosas Ruiz, Irving (2005-2007) A: not an author B: FCME 2 C: OAX 2 D: ih < 1%
- 480.- Rose, Joseph Nelson (1897-1911) A: Rose B: US 5 C: SIN 14 D: ih = 2.1%
- 481.- Rothfels, Carl J. (2009-2009) A: not an author B: MO 2 C: JAL 2 D: ih < 1%
- 482.- Rubio Rubio, Hiram (1988-1991) A: not an author B: IEB 5 C: QUE 1 D: ih = 5.9%
- 483.- Ruiz Acosta, Jesús Antonio (2010-2010) A: not an author B: INFyS 1 C: CAM 3 D: ih < 1%
- 484.- Ruiz Guzmán, Bulmaro (2010-2010) A: not an author B: INFyS 1 C: CHH 1 D: ih < 1%
- 485.- Rzedowski Rotter, Jerzy (1951-2002) A: Rzed. B: ENCB 17 C: MEX 20 D: ih = 6.8%
- 486.- Salas Morales, Silvia Hortensia (1988-2011) A: not an author B: MEXU 4 C: OAX 1 D: ih < 1%
- 487.- Salazar Chávez, Gerardo Adolfo (1984-2015) A: Salazar B: MEXU 2 C: CHP 5 D: ih < 1%
- 488.- Salazar García, Félix (1900-1914) A: not an author B: MEXU 1 C: CMX 2 D: ih < 1%
- 489.- Salinas Melgoza, Miguel Angel (2005-2005) A: not an author B: IEB 2 C: MIC 2 D: ih < 1%
- 490.- Salinas Tovar, Antonio (1985-1995) A: A. Salinas B: MEXU 5 C: OAX 2 D: ih = 2.9%
- 491.- Sánchez Escalante, José Jesús (2001-2012) A: not an author B: USON 1 C: SON 1 D: ih < 1%
- 492.- Sánchez García, Esther (2007-2008) A: not an author B: MEXU 3 C: MIC 1 D: ih > 10%
- 493.- Sánchez López, Fernando (2013-2014) A: not an author B: US 2 C: OAX 1 D: ih < 1%
- 494.- Sánchez Martínez, Arturo (2004-2011) A: not an author B: MEXU 3 C: OAX 1 D: ih < 1%
- 495.- Sánchez-Mejorada Rodríguez, Hernando (1948-1987) A: Sánchez-Mej. B: MEXU 1 C: HID 2 D: ih = 1.5%
- 496.- Sanders, Andrew C. (1980-1999) A: not an author B: LL-TEX 8 C: SON 9 D: ih = 1.2%
- 497.- Santana Michel, Francisco Javier (1981-1999) A: Santana-Mich. B: ZEA 7 C: JAL 2 D: ih = 7.9%
- 498.- Santiaguillo Hernández, José Francisco (1990-2000) A: not an author B: BANGEV 1 C: VER 1 D: ih < 1%
- 499.- Santíz Cruz, Esteban (1987-1998) A: not an author B: ECO-SC-H 4 C: CHP 1 D: ih > 10%
- 500.- Santíz Ruiz, Carmelino (1987-1988) A: not an author B: CHIP 2 C: CHP 1 D: ih > 10%
- 501.- Sarukhán Kermez, José Aristeo (1962-1975) A: not an author B: MEXU 2 C: PUE 1 D: ih < 1%
- 502.- Saynes Vásquez, Alfredo (1984-2005) A: Saynes B: MEXU 4 C: OAX 1 D: ih = 1.2%
- 503.- Schaffner, Johann Wilhelm (Guillermo) (1876-1879) A: W. Schaffn. B: MEXU 3 C: SLP 2 D: ih = 4.1%
- 504.- Scheinvar (Léia Akcelrad Lerner de Scheinvar), Léia (1966-2009) A: Scheinvar B: MEXU 3 C: HID 12 D: ih = 4.1%

- 505.- Schiede, Christian Julius Wilhelm (1829-1829) A: Schiede B: F 3 C: VER 3 D: ih < 1%
- 506.- Schwabe, Willmar (1977-1978) A: not an author B: MEXU 1 C: GRO 3 D: ih < 1%
- 507.- Seigler, David Standley (1969-1994) A: Seigler B: MEXU 3 C: NLE 7 D: ih < 1%
- 508.- Sepúlveda Sánchez, Manuel de Jesús (1993-1999) A: not an author B: MEXU 1 C: NAY 1 D: ih < 1%
- 509.- Servín Orozco, Benito (1990-1991) A: not an author B: IEB 4 C: QUE 1 D: ih = 2.0%
- 510.- Sessé y Lacasta, Martín de (1800-1803) A: Sessé B: F 2 C: SLP 2 D: ih < 1%
- 511.- Sharp, Aaron John (1944-1978) A: Sharp B: MEXU 4 C: PUE 9 D: ih < 1%
- 512.- Shreve, Forrest (1934-1940) A: Shreve B: ARIZ 3 C: SON 6 D: ih < 1%
- 513.- Silva Sáenz, Patricia (1992-1993) A: not an author B: IEB 3 C: MIC 1 D: ih = 1.2%
- 514.- Simá Polanco, Paulino (1983-2007) A: not an author B: CICY 7 C: YUC 3 D: ih = 6.8%
- 515.- Sinaca Colín, Santiago (1985-2011) A: not an author B: MEXU 5 C: VER 2 D: ih = 1.9%
- 516.- Skovmand, Bent (1989-1995) A: not an author B: CIMMYT 1 C: MEX 7 D: ih < 1%
- 517.- Smith, Charles Leonard (1894-1895) A: C.L. Sm. B: MO 6 C: VER 2 D: ih < 1%
- 518.- Smith, Claude Earle, Jr. (1961-1968) A: not an author B: MEXU 3 C: PUE 2 D: ih < 1%
- 519.- Smith, Damon Anne (1994-2012) A: not an author B: ECO-TA-H 1 C: CHP 1 D: ih < 1%
- 520.- Smith, Robert Ford (1960-1961) A: not an author B: LL-TEX 1 C: NLE 1 D: ih < 1%
- 521.- Snow, Neil (1995-1995) A: N. Snow B: MO 2 C: SON 5 D: ih < 1%
- 522.- Sohns, Ernest Reeves (1952-1955) A: Sohns B: US 2 C: SLP 5 D: ih < 1%
- 523.- Solano Camacho, Eloy (1987-2008) A: Solano B: MEXU 2 C: OAX 1 D: ih < 1%
- 524.- Solheim, Stephen L. (1982-1984) A: not an author B: XAL 2 C: VER 2 D: ih < 1%
- 525.- Solís Cumplido, Ignacio (1985-1988) A: not an author B: IEB 3 C: DUR 2 D: ih = 2.8%
- 526.- Solís Magallanes, José Arturo (1976-1986) A: not an author B: MEXU 6 C: JAL 3 D: ih = 1.7%
- 527.- Soto Núñez, José Carmen (1977-2014) A: J.C. Soto B: MEXU 9 C: MIC 5 D: ih < 1%
- 528.- Soule, Jacqueline A. (1989-1992) A: not an author B: LL-TEX 3 C: CHP 5 D: ih < 1%
- 529.- Sousa Sánchez, Mario (1961-1996) A: M. Sousa B: MEXU 10 C: OAX 11 D: ih = 2.0%
- 530.- Spellenberg, Richard William (1972-1998) A: Spellenberg B: MEXU 6 C: CHH 4 D: ih < 1%
- 531.- Spencer, James R. (1997-1999) A: not an author B: LL-TEX 1 C: CHH 1 D: ih < 1%
- 532.- Stanford, Loudon Roberts (1941-1949) A: not an author B: MO 5 C: TAM 2 D: ih < 1%
- 533.- Stauning, Ole (1989-1989) A: not an author B: AAU 2 C: YUC 2 D: ih < 1%
- 534.- Steinmann, Victor Werner (1993-2012) A: V.W. Steinmann B: IEB 6 C: MIC 4 D: ih < 1%
- 535.- Stevens, Warren Douglas (1971-1988) A: W.D. Stevens B: MO 4 C: CHP 5 D: ih < 1%
- 536.- Stewart, Robert M. (1940-1942) A: not an author B: LL-TEX 1 C: COA 2 D: ih < 1%
- 537.- Stuessy, Tod Falor (1965-2006) A: Stuessy B: LL-TEX 4 C: MIC 6 D: ih < 1%
- 538.- Sundberg, Scott D. (1982-1984) A: S.D. Sundb. B: LL-TEX 2 C: NLE 3 D: ih < 1%
- 539.- Swallen, Jason Richard (1931-1932) A: Swallen B: US 2 C: YUC 3 D: ih = 2.4%
- 540.- Takaki Takaki, Francisco (1960-1970) A: not an author B: INIF 3 C: SLP 2 D: ih = 1.2%
- 541.- Tapia Muñoz, José Luis (1981-2009) A: not an author B: CICY 4 C: YUC 3 D: ih < 1%
- 542.- Tejero Díez, José Daniel (1985-2011) A: Tejero B: MEXU 3 C: MEX 4 D: ih < 1%
- 543.- Téllez N., Angélica (2001-2007) A: not an author B: [NOT IDENTIFIED] 1 C: PUE 2 D: ih < 1%
- 544.- Téllez Valdés, Oswaldo (1976-2005) A: O. Téllez B: MEXU 10 C: NAY 10 D: ih = 3.8%
- 545.- Tenorio Lezama, Pedro (1982-2003) A: Tenorio B: MEXU 13 C: PUE 17 D: ih = 3.5%
- 546.- Thorne, Robert Folger (1953-1988) A: Thorne B: MEXU 8 C: BCN 4 D: ih = 1.1%
- 547.- Tlapa Almonte, Margarita (1987-2001) A: not an author B: HUAP 5 C: PUE 1 D: ih = 3.9%
- 548.- Torres Bahena, Elizabeth (1975-2007) A: not an author B: MEXU 2 C: OAX 1 D: ih = 2.5%
- 549.- Torres Colín, María Leticia (1985-1987) A: L. Torres B: MEXU 4 C: OAX 2 D: ih > 10%
- 550.- Torres Colín, Rafael (1982-2016) A: R. Torres B: MEXU 9 C: OAX 13 D: ih = 7.3%
- 551.- Torres García, Octavio (1984-2010) A: not an author B: INFYS 1 C: ZAC 2 D: ih < 1%
- 552.- Townsend, Charles Henry Tyler (1899-1899) A: not an author B: MO 5 C: CHH 1 D: ih = 6.3%
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- 556.- Turner, Billie Lee (1962-1993) A: B.L. Turner B: LL-TEX 3 C: NLE 5 D: ih = 1.7%
- 557.- Turner, Raymond Marriner (1964-1979) A: not an author B: ARIZ 2 C: SON 2 D: ih = 1.2%
- 558.- Tuz Novelo, Margarito (2004-2004) A: not an author B: ECO-CH-H 1 C: ROO 1 D: ih < 1%
- 559.- Ucán Ek, Edilberto (1979-1991) A: not an author B: CICY 6 C: YUC 3 D: ih = 8.5%
- 560.- Uicab Mejía, José Guadalupe (2010-2010) A: not an author B: INFYS 1 C: ROO 2 D: ih < 1%

- 561.- Valdés Reyna, Jesús (1973-1993) A: Valdés-Reyna B: ANSM 6 C: COA 3 D: ih = 3.4%
- 562.- Valdivia Quijano, Pablo Ernesto (1974-1976) A: not an author B: XAL 3 C: VER 2 D: ih = 1.5%
- 563.- Valencia Ávalos, Susana (1986-2005) A: S. Valencia B: FCME 2 C: GRO 2 D: ih = 1.2%
- 564.- Valiente Banuet, Alfonso (1981-1995) A: not an author B: MEXU 1 C: PUE 2 D: ih > 10%
- 565.- Van Devender, Thomas Roger (1976-2010) A: Van Devender B: ARIZ 8 C: SON 5 D: ih < 1%
- 566.- Vargas Rivero, Carlos (1980-1981) A: not an author B: CICY 3 C: YUC 1 D: ih = 2.8%
- 567.- Vázquez Blanco, Fructuoso (1980-1985) A: not an author B: XAL 4 C: VER 2 D: ih = 1.2%
- 568.- Vázquez García, José Antonio (1985-1987) A: A. Vázquez B: ZEA 1 C: JAL 1 D: ih < 1%
- 569.- Vázquez Sánchez, Carlos (2010-2010) A: not an author B: INFyS 1 C: ROO 1 D: ih < 1%
- 570.- Vázquez Soto, Jesús (1960-1972) A: not an author B: MEXU 2 C: MOR 3 D: ih = 1.4%
- 571.- Vázquez Torres, Mario (1972-2008) A: Vázq. Torres B: XAL 6 C: VER 1 D: ih = 2.8%
- 572.- Vázquez Torres, Vicente (1975-1990) A: not an author B: XAL 3 C: VER 1 D: ih < 1%
- 573.- Vázquez Villagrán, Lucía (1988-1991) A: not an author B: MEXU 3 C: COL 3 D: ih < 1%
- 574.- Vega Aviña, Rito (1978-2000) A: Vega B: UAS 5 C: SIN 2 D: ih = 1.3%
- 575.- Vela Gálvez, Luciano (1961-1977) A: not an author B: INIF 3 C: VER 6 D: ih = 2.5%
- 576.- Velasco Gutiérrez, Kenia (2004-2009) A: K. Velasco B: MEXU 2 C: OAX 1 D: ih < 1%
- 577.- Velázquez Montes, Ernesto (1998-1999) A: not an author B: FCME 2 C: GRO 1 D: ih < 1%
- 578.- Velázquez P., Yelvi Ludim (2010-2010) A: not an author B: INFyS 1 C: CHP 1 D: ih < 1%
- 579.- Ventura Aburto, Ángel (1975-1986) A: not an author B: MEXU 8 C: CMX 4 D: ih = 9.9%
- 580.- Ventura Aburto, Francisco (1969-1986) A: not an author B: XAL 10 C: VER 7 D: ih = 6.8%
- 581.- Ventura Aburto, María Elena (1982-1987) A: not an author B: XAL 1 C: MEX 2 D: ih < 1%
- 582.- Ventura Ventura, Emma (1982-1992) A: not an author B: MEXU 9 C: GUA 5 D: ih > 10%
- 583.- Vera Santos, José (1941-1947) A: not an author B: MEXU 5 C: SON 3 D: ih = 4.4%
- 584.- Viana Lases, Jorge Alberto (1995-2005) A: not an author B: HUMO 1 C: CAM 2 D: ih < 1%
- 585.- Vibrans Liebmann, Heike (1980-2002) A: not an author B: MEXU 3 C: MEX 7 D: ih < 1%
- 586.- Vicab Mejía, José (2010-2010) A: not an author B: INFyS 1 C: ROO 3 D: ih < 1%
- 587.- Villanueva Gutiérrez, Martín Rogel (1981-2004) A: not an author B: ECO-CH-H 3 C: ROO 2 D: ih < 1%
- 588.- Villarreal de Puga, Luz María (1965-1996) A: not an author B: MEXU 5 C: JAL 2 D: ih = 3.7%
- 589.- Villarreal Quintanilla, José Angel (1979-2008) A: Villarreal B: MEXU 8 C: COA 4 D: ih = 3.8%
- 590.- Villaseñor Ríos, José Luis (1980-2013) A: Villaseñor B: MEXU 4 C: OAX 11 D: ih = 2.4%
- 591.- Villatoro Robles, Jorge Alberto (2010-2010) A: not an author B: INFyS 1 C: CHP 1 D: ih < 1%
- 592.- Villela, Sergio (2010-2010) A: not an author B: INFyS 1 C: ZAC 1 D: ih < 1%
- 593.- Vovides, Andrew Peter (1976-1999) A: Vovides B: XAL 1 C: VER 2 D: ih = 1.9%
- 594.- Wagenbreth, Irmtraud (1989-1991) A: not an author B: MEXU 2 C: GRO 1 D: ih < 1%
- 595.- Webster, Grady Linder (1947-1989) A: G.L. Webster B: MEXU 5 C: OAX 16 D: ih < 1%
- 596.- Wendt, Thomas Leighon (1972-1988) A: T. Wendt B: MEXU 10 C: COA 7 D: ih = 3.9%
- 597.- White, Stephen Story (1938-1941) A: S.S. White B: MEXU 4 C: SON 2 D: ih < 1%
- 598.- Wiggins, Ira Loren (1929-1971) A: Wiggins B: MEXU 13 C: BCN 3 D: ih > 10%
- 599.- Wilbur, Robert Lynch (1949-1984) A: Wilbur B: MEXU 2 C: JAL 1 D: ih < 1%
- 600.- Wilson, James Stewart (1966-1968) A: not an author B: LL-TEX 1 C: COA 2 D: ih < 1%
- 601.- Worthington, Richard D. (1981-1983) A: not an author B: LL-TEX 3 C: DUR 3 D: ih < 1%
- 602.- Wynd, Frederick Lyle (1936-1937) A: not an author B: ARIZ 5 C: COA 1 D: ih = 3.1%
- 603.- Yahara, Tetsukazu (1994-2003) A: Yahara B: MEXU 1 C: GRO 6 D: ih < 1%
- 604.- Yatskievych, George A. (1981-1981) A: Yatsk. B: MO 2 C: OAX 1 D: ih < 1%
- 605.- Yen Méndez, María del Carmen (1994-2002) A: not an author B: MEXU 2 C: CHH 2 D: ih < 1%
- 606.- Yescas de los Angeles, Tomás (2010-2010) A: not an author B: INFyS 1 C: OAX 3 D: ih < 1%
- 607.- Zamora Crescencio, Pedro (1986-1998) A: not an author B: XAL 6 C: VER 2 D: ih = 5.9%
- 608.- Zamudio Ruiz, Sergio (1977-2012) A: Zamudio B: IEB 8 C: QUE 11 D: ih = 4.5%
- 609.- Zizumbo Villarreal, Daniel (1978-1986) A: not an author B: MEXU 3 C: OAX 3 D: ih > 10%
- 610.- Zolá Báez, Manuel Gonzalo (1975-1988) A: not an author B: XAL 4 C: VER 2 D: ih > 10%
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