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Final Thesis

Studying the popularization of medicinal plants in the USSR by means of local newspapers. Case study based on the materials of the local newspaper "Pechorskaia Pravda" in 1976-1990

Supervisor
Prof. Renata Sõukand

Co-Supervisor
Olga Belichenko PhD

Graduand
Tatiana Demenchenok

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877252

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Abstract

Background:

Various historical sources can provide valuable data about human-plant relationships in the past. This thesis is dedicated to document the medicinal plants popularization based on the materials of the local newspaper "Pechorskaya Pravda" published in the Pechorsky District, a subdivision of Pskov Oblast located in North-West Russia (then Russian SFSR) on the border with Estonia (then Estonian SSR). Moreover, it aims to analyze the extracted data regarding medicinal plants usage and to qualitatively compare the results from the area that was studied with the State Pharmacopoeia.

Methods: Data was mainly obtained by manual creation of the medicinal plants database. The information about plants, their suggestion instances, used plant parts, comments and their local names was extracted from the newspaper and collected in a database.

Results: On the whole, a total of 1010 records have been extracted in 2 the databases called Medicinal plants (General) and Procurement Office. The biggest parts of the records are shared among 2 rubrics: Procurement Office and Green Pharmacy with 474 and 411 records that are making up to 47% and 40.7% respectively of the whole dataset. As for the overall number of taxa from the mentioned above rubrics, 81 unique names have been extracted from the rubrics. Of the 34 of medicinal plants reported in the newspaper's Green Pharmacy rubric, 22 taxa were named in the 11th edition of Pharmacopoeia. According to the analysis of diseases categories, the most frequently mentioned diseases categories were Digestive and Skin.

Conclusions: This thesis contributes to provide insight into popularization and dissemination of medicinal plants in the Pechorsky District. The local newspaper's data analysis and the comparison of the extracted data with such an official source of knowledge as the State Pharmacopoeia was done. However, as this work was the pioneering one to use such materials for the discussion about the human-plant relationship, the further detailed analysis and the comparison with other materials are needed to be done in future.

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1. Introduction

1.1 Popularization of medicinal plants. The newspapers as disseminators of knowledge

It is known that wild and cultivated plants may have different benefits such as: medicinal, pharmaceutical, nutraceutical and health ones. Plants are also considered as excellent sources of active phytochemicals with importance in various diseases prevention (Shikov et al. 2017).

Since ancient times the knowledge about medicinal plants has been spread not only orally, but also in writing. Books, magazines, newspapers have been noted as one of the most important sources of knowledge for people at all times.

The physician P. Dioscorides (AD 40–90) wrote De Materia Medica, that significantly influenced early medicine in Europe and inspired herbal texts production, especially during the Middle Ages. In the late 15th century, the invention and spread of Gutenberg's printing press encouraged a revolution for the propagation of written scientific knowledge, including the knowledge of medicinal plants (Pardo-de-Santayana et al. 2015).

Considering newspapers as a specific source of knowledge, it must be said that since the middle of the 19th century in Nordic and Central-European countries, they have been used by folklorists to collect lyrical and practical folklore through newspapers advertisements (Kalle et al. 2022).

It is significant to notice that newspaper advertisements have been used not exclusively by folklorists. For instance, the physician M. Ostrov collaborated with newspapers to collect ethnopharmacological data with the participation of citizens. The newspapers voluntary willingness to provide space for publishing and later for collecting data, and the use of a survey method contributed to the medicinal plant's popularization and, the so-called, thirsting for knowledge about them among the population (Kalle et al. 2022).

Moving forward from the 19th to the 20th century and from Europe to the USSR, it is impossible to overestimate the importance of newspapers in the Soviet people life. In the Soviet Union,

newspapers were the most accessible source of information for a wide range of people. Nowadays, newspapers from the times of the USSR are considered as one of the most effective and proven historical sources reflecting the Soviet era.

The Soviet period brought some more focused work on local medicinal and non-medicinal plant uses. The popularization of plants was carried out through various scientific and popular sources including the local press (Jernigan et al. 2017).

This thesis is based on the materials of such a local newspaper as 'Pechorskaia Pravda.' It is a socio-political type of press of the Pechorsky district. The first issue was published in August 1944. At first, the newspaper was published once a week, and then twice - on Wednesdays and Saturdays. Since 1952, the newspaper started to be published on four pages, and its edition was 2,500 copies (Pskov Encyclopedia, 2007).

1.2 Objectives of the study

The main objectives of this study were to analyze the content of the 'Pechorskaia Pravda', describing possible use of medicinal and non-medicinal plants as well as to understand the way that authors have applied to spread the knowledge of the plants among locals.

In order to answer the objectives, the following steps have been done:
1) Identifying all uses of medicinal and non-medicinal plants that have been found in the various rubrics and subrubrics of the selected historical source.
2) Creating a database for further detailed analysis in the future.
3) On the example of the data based on available local newspaper about medicinal plants reported for treating different spectrum of diseases:

- Listing all medicinal plants mentioned in the source, the diseases and the treatment with those plants.
- Identifying the plants that have been included in the State Pharmacopoeia of the USSR and which, on the contrary, have been mentioned only in the local newspaper.
- Comparing the use of plants described in the pharmacopoeia and in the newspaper, highlighting similarities and differences.

According to Leonti, in literate societies the medicinal plant knowledge transmission by means of texts and other media containing local as well as non-local knowledge has a more immediate and prolonged effect than oral transmission (Leonti, 2011).

Currently various scientific and popular sources provide a wide range of ethnopharmacological data on many plants. However, the sources of that data, as well as the data itself, are often not clear, that can cause the erroneous use of plants among ordinary people or even in official medicine (Sõukand et al. 2020).

The relevance of this work lies to the fact that by comparing the plant use in the local newspaper and in the pharmacopoeia, it will be possible to confirm or refute the correctness of the advice providing by the newspaper on the plants use for medicinal purposes, as well as to understand which plants have been popularized at that time by the local newspaper.

This thesis is a part of a larger project, DiGe: Ethnobotany of Divide Generations in the Context of Centralization (2017-2023), PI Renata Sõukand. The main goal of the project is studying the changes influenced by diverse policies as well as socio-economical contexts on the border of Eastern Europe and the former USSR.

2. Background

2.1 Pechorsky District and its peculiarity

The database covers the westernmost region of Russia, Pechorsky District, a subdivision of Pskov Oblast located in North-West Russia on the border with Estonia (Belichenko et al., 2021). The main reasons for choosing this region are its well-delineated location and lack of knowledge about this area, both ethnographically and ethnobotanically, despite the influence and closeness of much more explored Estonia in recent years.

Pechory is a cultural, spiritual as well as the administrative center of Pechorsky District. This small town was founded in the 16th century near the Pskov-Caves Monastery established in 1473 by the Orthodox priest. The town has its special name, Pechory, or earlier Pechery that derives from the word peshchery, Russian name for caves.

For most of the history of Pechory, Russians dominated in the ethnic structure of the local population. However, there was the period when the town was part of Independent Estonia (1920 – 1940). The centralized Soviet education and medicine arrived later in the region than in the rest of Pskov due to that historical fact. Another phenomenon of Pechorsky District is that it was not affected by the collective farming before 1949 (Belichenko et al. 2022). Such peculiarities of the region influence the researchers' opinion to perceive the region as a particular area, with its special natural resources.

Speaking about the nature (landscape and flora) of Pechorsky District, it is crucial to say that they differ from that of Pskov Oblast. The natural appearance of the region was formed in glacial and post-glacial times. Traces of glaciation are represented by large moraine hills near the town of Pechory. In that area, near the Estonian border, pine forests have been preserved, those once densely covered the entire territory of Pechorsky District.

Concerning the infrastructure of this town, it is significant to mention that important transit routes pass through the territory of the district and the city, which connect the central and northwestern regions of Russia (then Russian SFSR) with Estonia (then Estonian SSR). Educational sector is described by three secondary schools: Gymnasium of Pechory (founded in 1944), Linguistic Gymnasium (founded in 1919) and School No. 3. Healthcare system is represented by central regional hospital and seven pharmacies. Speaking about cultural segment, the Pechorsky Center of Culture, the Central Regional Library of Pechory (founded in 1944) and the regional children's library, as well as the children's art school are functioning in the city (Pskov Encyclopedia, 2007).

All in all, it is quite impossible not to cite the words of the famous local historian I.I.Vasilev of Pskov Oblast, who wrote at the very end of the 19th century the following: "In general, there is very little information in the literature on the ethnography of Pskov province, there are not even simple notes, and there can be no talk of any research." (Malyakov, 1981). It must be admitted that these words are still relevant today. At the end of the 20th - the beginning of the 21st centuries, a sufficient number of studies devoted to both, the ethnic culture and the ethnobotanical component of this region have not been carried out yet.

3. Materials and methods

3.1. Database

The database has been created, based on the materials from the local newspaper 'Pechorskaia Pravda'. The preselection of materials was done by the assistant supervisor Olga Belichenko. After that, I have done the manual sorting of the relevant information from the newspaper and put it in the separate spreadsheets. The files have received their names with respect to the corresponding newspaper's rubrics:

1) Medicinal plants;
2) Procurement office (Zagotkontora);
3) Human and nature;
4) Green pharmacy;
5) Doctor's advice;
6) Announcements for hunters and fishermen;
7) Melioration.

After analyzing manually sorted information, I have decided to proceed working on the data from the first four files as with the most valuable ones for this type of study to create three separate databases by means of Excel spreadsheets. The created databases are the following:

1) Medicinal plants (General);
2) Procurement office medicinal plants;
3) Procurement office fungi.

The first Excel spreadsheet includes the columns with the following information:

I. Number (the sequence number of the file);
II. File ID;
III. File number;
IV. File code;
V. Year;
VI. Month;

VII. Rubric (Original name);
VIII. Rubric (English name);
IX. Subrubric (Original name);
X. Subrubric (English name);
XI. Subrubric description;
XII. Name of the plant (Original name);
XIII. Part of the plant (English name);
XIV. Latin name;
XV. Family;
XVI. Latin name with author;
XVII. RAWGraphs application (English name);
XVIII. Author of the rubric (when stated);
XIX. Comments (when needed)
XX. Suggestion instances (Original name);
XXI. Suggestion instances (English name);
XXII. General disease categories.

The columns in the table named Year and Month correspond to the year and month of the newspaper issue. The newspaper issues from 1976 to 1990 inclusively were found for this work. However, there are no issues from 1980 and 1981 because the respective file was absent from the editing house collection.

In the found material, there are no January issues as well, since the relevant information was never published in January, although the January newspaper files were systematically included in the sample.

The column Rubric includes three names with respect to the newspaper's rubrics: Green Pharmacy, Procurement Office, Human and nature.

It is also important to notice that there is the following name - Not applicable (N / A) in the column with the rubric's names. This name has been applied since there was information about medicinal plants, found in the newspaper 'Pechorskaia Pravda', that did not belong to any of the mentioned above rubrics.

The column Subrubric consists of the unique name according to the information I have extracted from the newspaper's variety of rubrics – Medicinal plants.

As for the Subrubric description, I have highlighted the key points, which made up the following groups:

- Medicinal raw materials procurement process;
- Medicinal plant description, procurement time and drying methods;
- Application in traditional medicine;
- Application in medical practice;
- Folk remedies application for colds;
- Medicinal herbs procurement process (pharmacies);
- Medicinal herbs procurement process (procurement office);
- Medicinal and technical raw materials procurement process.

In addition to the listed above groups, there are special categories that have been mentioned only once. For instance, there are gardening advice about growing 'The Root of life' – *Panax ginseng*, the application of *Artemisia vulgaris* not only in medicinal practice but also in cookery, *Linum usitatissimum* usage as a valuable plant to provide fibers and oil, the instructions of the procurement process and drying methods for different parts of the plant.

The original names of the plants have been reported according to the newspaper. The database Plants of the World Online, the Royal Botanic Gardens KEW has been used to check the accepted Latin names of the plants as well as their families.

Talking about the suggestion instances that have been mentioned in the rubric by pharmacists, it's significant to represent their division to the general disease categories checked by the International Classification of Primary Care – 2nd Edition (ICPC-2) of the Wonca International Classification Committee (WICC). In the database there was a column called General disease categories to list and coordinate each suggestion instance with one of that category. The mentioned above classification is divided into the following categories such as:

A - General and Unspecified diseases (abbreviated as General)

B - Blood, Blood Forming Organs and Immune Mechanism (Blood)

D - Digestive

F - Eye

E - Ear

K - Cardiovascular

L - Musculoskeletal

N - Neurological

P - Psychological

R - Respiratory

S - Skin

T - Endocrine/Metabolic and Nutritional (Endocrine)

U - Urological

W - Pregnancy, Childbearing, Family Planning (Pregnancy)

X - Female Genital (FGenital)

Y - Male Genital (MGenital)

Z - Social Problems (Social)

As for the Procurement office medicinal plants and fungi spreadsheets, they have been created separately to represent the variety of medicinal plants and fungi that were valuable to procure in the period the newspaper provides us.

These two spreadsheets include the columns with the following information:

I. Number (the sequence number of the file);
II. File ID;
III. File number;
IV. File code;
V. Year;
VI. Month;
VII. Rubric (Original name);
VIII. Rubric (English name);
IX. Plants/Fungi to procure;

X. Part of the plants (for the spreadsheet with plants, English name);
XI. Latin name;
XII. Family;
XIII. Latin name with author;
XIV. RAWGraphs application (for the spreadsheet with plants, English name);
XV. Goods for exchange (Original name);
XVI. Goods for exchange (English name);
XVII. Comments (when needed);
XVIII. Author of the rubric (when stated).

Parts of the plants for the databases have been classified as following, according to the terminology used in previous ethnobotanical studies:

- Aerial parts;
- Bark;
- Buds;
- Bulbs;
- Female catkins (of *Alnus* exclusively);
- Flowers;
- Fruit;
- Juice (of *Betula pubescens* exclusively);
- Leaves;
- Root;
- Spores (of *Lycopodium clavatum* exclusively);
- Stalks;
- Strigs;
- Tubers (of *Solanum tuberosum* exclusively).

The special column that is called RAWGraphs application that presented in the databases was crucial to be integrated to help illustrating the part with the results of this work. It includes Latin names of the plants for those plants that were mentioned more than once in the period of the newspaper publishing, I was working on in this research. For those plants, mentioned only one time (in the precise year and month) my supervisor advised me to apply the term Other to

highlight them somehow and to discuss in more details later in this work.

3.2. Green Pharmacy and Procurement Office rubrics analysis

For this type of work, I have limited the more detailed analysis to the rubrics of Green Pharmacy and Procurement Office as they are accounted for by the largest number of records. What is more, the detailed analysis of the General disease categories will be represented by means of Green Pharmacy rubric as it was written mainly by the pharmacists and provided suggestion instances of the medicinal plant use. Based on this analysis, the further comparison with the State Pharmacopoeia of the USSR (10^{th} and 11^{th} editions) will be represented.

First of all, the Green Pharmacy has been chosen to proceed with the analysis as the vast number of medicinal plants had been mentioned here.

This rubric has been written by the pharmacists and procurement office specialists. The only one pharmacy №24 was indicated in the database giving the idea that probably it was the principal one for the whole Pechorsky District. Unfortunately, the precise number of pharmacies that were functioning in that period of time hasn't been found because of the scarcity of the information about this particular area.

With help of suggestion instances described by pharmacists the readers of Pechorskaia Pravda could imagine the spectrum of possible folk medicine application of different plants from this region.

Plants identification has been done without too many obstacles – the original names were quite common and expected to be found in the studied region. Moreover, I have been already acquainted with some of the Latin names before creating the database, after studying the works of the authors who have done their researches in the ethnobotany field of different countries and regions with plants that were similar or identic to the plants I reported in the databases.

The Procurement Office rubric was characterized by advertisements in the newspaper without indicating the authors as it was done in Green Pharmacy. Working on the data provided, my main goal was to understand the tendency in the procurement in that period, to create separate

database of medicinal plants and fungi, to get the idea of the importance of the procurement offices for locals, which of the procured plants were medicinal and edible, what role offices played in the economic arena of the region and country.

Generally speaking, during the analysis of two rubrics all medicinal plants, suggestion instances, comments and other necessary data were taken into account. Data that could not be identified immediately was practically not found in the newspaper materials.

For creating diagrams and graphs, various programs were used. The graphs concerning the database information to make a better comparison of medicinal plants have been created online by means of https://rawgraphs.io/, RAWGraphs, A Visualisation Platform to Create Open Outputs. The Venn diagrams have been applied to illustrate the comparison of the rubrics and to represent some statistical data regarding plants listed. They have been created online by means of https://bioinformatics.psb.ugent.be/webtools/Venn/.

The synthesis of the database information is presented in Appendix by means of Word spreadsheets.

3.3. Comparison with the State Pharmacopeia

Besides, to make a comparison in the application of the medicinal plants as folk remedies from the newspaper Green Pharmacy rubric, the 10th and 11th editions of State Pharmacopoeias of the USSR have been studied as well as the research provided by Shikov et al. (2014).

The separate spreadsheet was done based on the table that Shikov has been illustrated in 'Medicinal Plants of the Russian Pharmacopoeia, history and application'. The names of the plants have been checked by means of the database Plants of the World Online (POWO KEW). Initially, the table 'Monographs for medicinal plants included in the State Pharmacopoeia of the USSR, 11th edition' from the research had three columns with the following names:

- Monograph title;
- Latin name of plant, family (as in the State Pharmacopoeia of the USSR);
- Pharmacological group.

The reorganization of the initial table has been done to make the comparison between the data from the Green Pharmacy rubric of 'Pechorskaia Pravda' and two editions of Pharmacopoeia. The following columns have been added:

- Accepted name;
- Ph XI (the 11th edition of Pharmacopoeia);
- Ph X (the 10th edition of Pharmacopoeia);
- Green Pharmacy rubric;
- Green Pharmacy general disease categories.

Those plants that have been mentioned in both Pharmacopoeias and newspaper's rubric have been marked with "X". The same procedure took place for the comparison of the Pharmacological groups of the listed plants with general disease categories classified by ICPC-2.

The second column of the initial table I had to split in two separate columns to be more convenient for the further comparison – Latin name and Family as it was done in the database.

The analysis results of the databases are shown in Chapter 4. Afterwards, the comparison of the Green Pharmacy list of medicinal plants with the research done by Shikov based on the State Pharmacopoeia of the USSR (11th edition) is presented in Chapter 5.

4. Results

4.1 General outlook of the recorded data

On the whole, a total of 1010 records have been extracted in 2 the databases called Medicinal plants (General) and Procurement Office. The biggest parts of the records are shared among 2 rubrics: Procurement Office and Green Pharmacy with 474 and 411 records that are making up to 47% and 40.7% respectively of the whole dataset. Various competitions organized by procurement office and the exchanging process of plants and goods are accounted for by 5% and have been included in the Procurement Office category. The third largest category is classified as N/A records (it means Not Applicable as there was a block of announcements that did not have any particular name) with accounted for by 10.7% of medicinal plants. The smallest portion of plants (1.7%) is described by Human and Nature rubric.

As for the overall number of taxa from the mentioned above rubrics, 81 unique names have been extracted from the rubrics mentioned above where the largest number (57 taxa) is mentioned in the Procurement Office (further PO), the second place is presented by N/A (further NA) category (43 taxa), followed by Green Pharmacy (further GP) with 34 taxa respectively and the smallest number (only three taxa) is recorded in Human and Nature rubric (further HN) (fig.1).

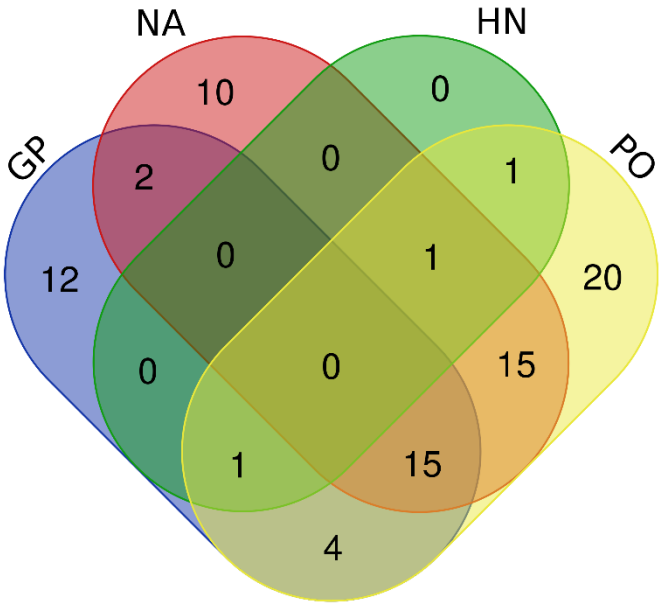


Fig. 1: Venn diagram of taxa extracted from the rubrics

4.2 Green Pharmacy and Procurement Office analysis

4.2.1 Green Pharmacy analysis

The Green Pharmacy rubric is characterized by the announcements of local pharmacists about those plants that were useful to collect for the use in traditional medicine. Under the Procurement Office rubric, there were announcements compiled by employees of this institute with their opinions on what is useful to procure from the local flora, as well as the economic side of the discussion (i. e. medicinal plant prices and other types of incentives for the local society). In this chapter, I would like to compare the taxa presented in two dominated rubrics.

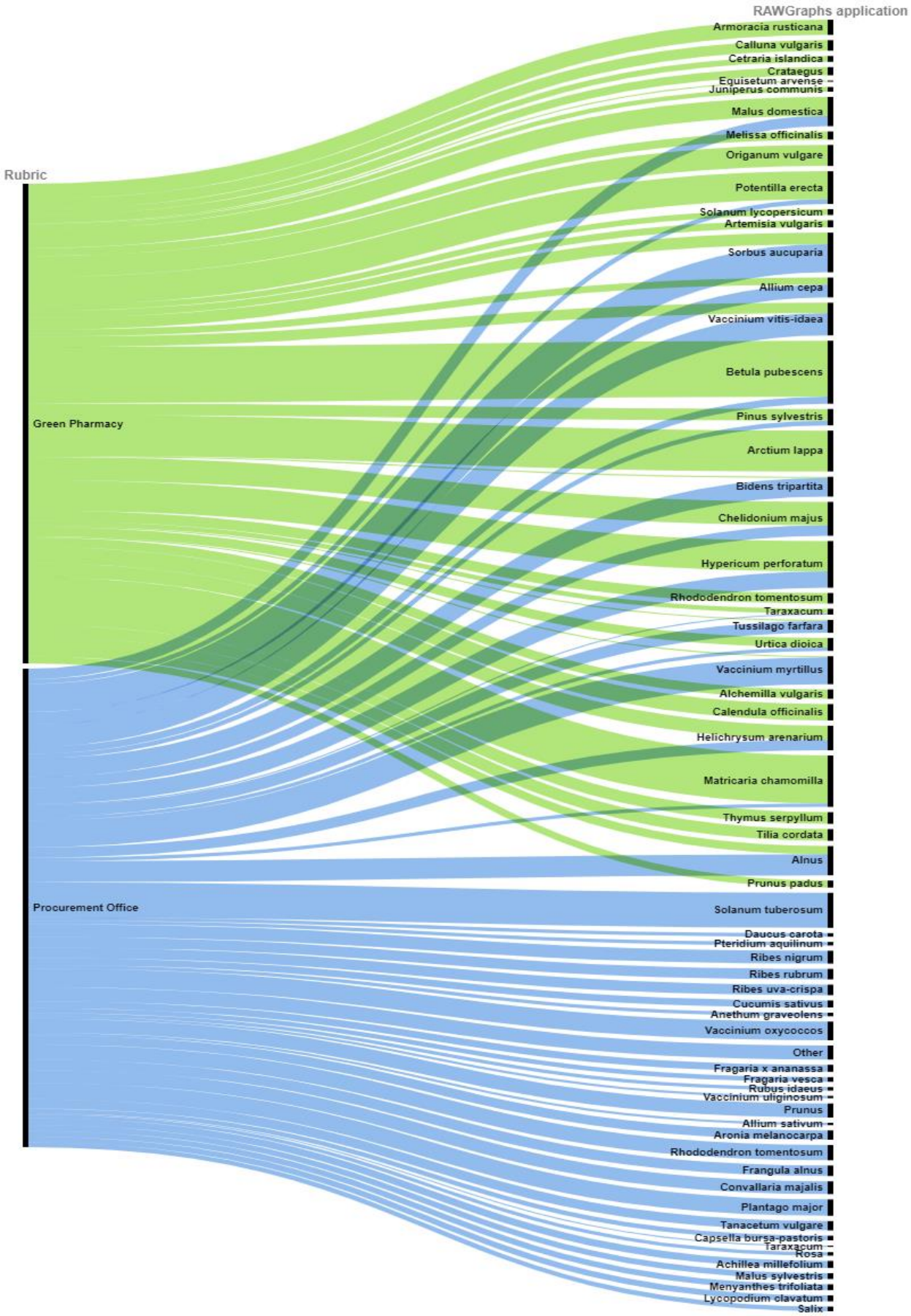


Fig. 2: Distribution of taxa among two dominated rubrics (GP and PO rubrics)

Figure 2 shows taxa that were recorded in two rubrics, where 71 is the overall number of unique elements. 20 taxa are mentioned in both, GP and PO rubrics while 51 have been divided as the following: 14 taxa in GP and 37 taxa in PO.

Regarding the Green Pharmacy rubric, there are the following distribution of the plant families' records (further FRs) in 1982-1990:

1990 was the year with the largest portion of records (109 FRs, 26.5%), where the biggest part is accounted for Rosaceae, followed by Asteraceae, Lamiaceae and Brassicaceae. The next part of records is published in 1988 (102 FRs, 24.9 %), where more than 50% are placed by Asteraceae. 1989 was fruitful for the various types of records (98 FRs, 23.9%), the biggest part is taken by Rosaceae that is distributed quite proportionally among 1989 and 1990 while the smallest percentage is accounted for by two families: Pinaceae and Urticaceae. 1986 is presented by 81 records that is the last year with such a big representation (19.7% of all recommendations) divided between the following families: Betulaceae (more than a half records), followed by Hypericaceae, Laminaceae and Asteraceae. It is significant to mention that Asteraceae is registered in the announcements in each year of that time period, not being stated only in 1982 and 1983. As for these two years, they can be described with a lack of Green Pharmacy rubric – 5 FRs (1.2% of all records) have been registered in 1983 with 100% of Solanaceae and only one record of Betulaceae (0.2%) has been published in 1982.

There are also five records of one lichen that is important to be mentioned in this work, too. The Green Pharmacy rubric has a special announcement of *Cetraria islandica* that emically is considered equal to the plant. It has been described putting attention to the fact that this lichen from the Parmeliaceae family is widely distributed in the USSR: tundra and forest areas, as well as in the highlands. As this type of lichen has been reported in the rubric, it was necessary to mention it in the database as well. The pharmacist stated not only about several suggestion instances to be treated by means of this lichen but also about its peculiarity to be a so-called vegetable "barometer", which serves as an indicator of the air purity.

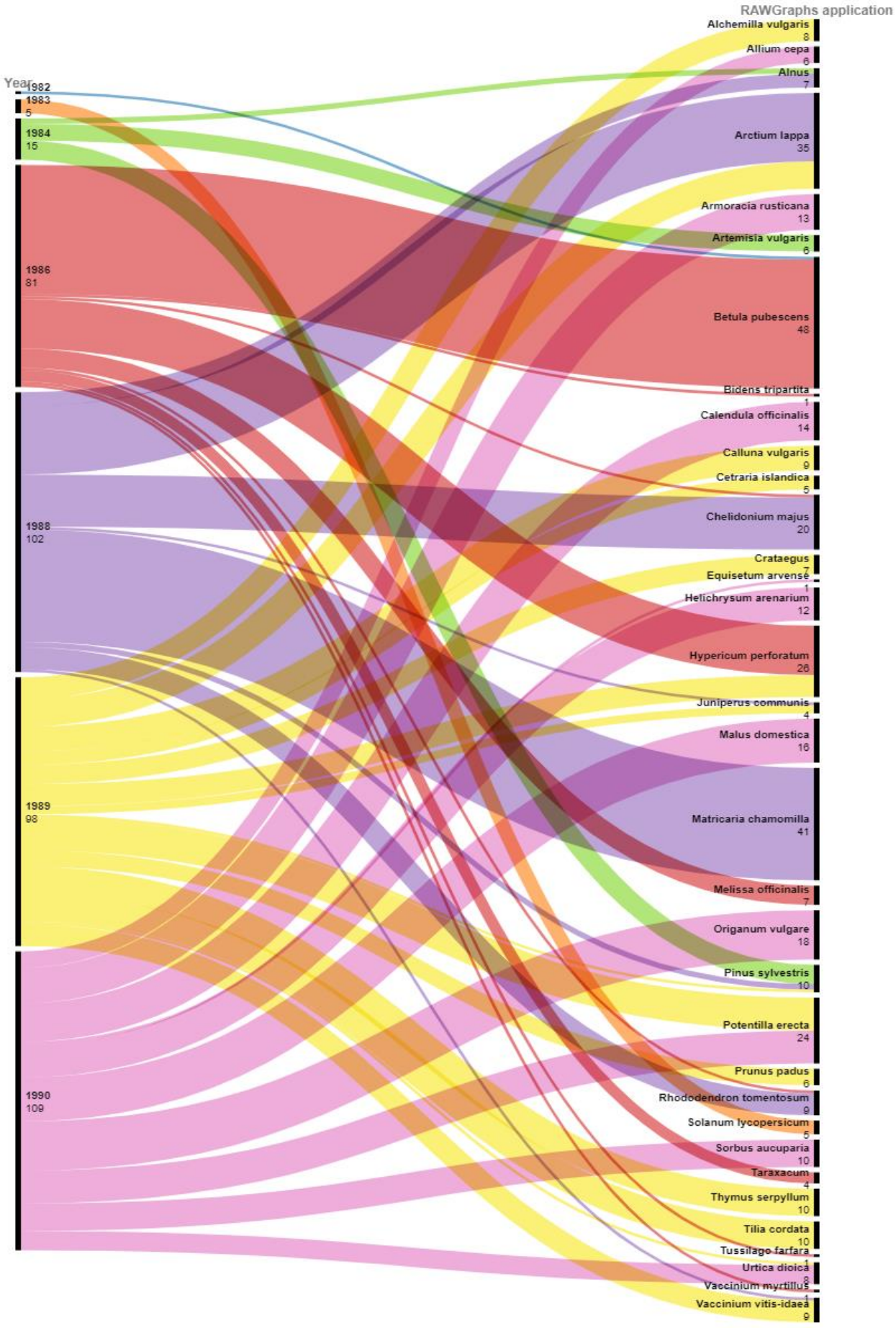


Fig. 3: Distribution of taxa records number per years (GP rubric)

As for the distribution of taxa in the Green Pharmacy rubric, it can be characterized by the following information: the largest part is shared between *Betula pubescens* Ehrh. and *Matricaria chamomilla* L. with 12% and 10% of all records respectively. *Betula pubescens* Ehrh. is represented mainly in the announcements published in April, 1986 and it has been mentioned just once in March, 1982. Parts of the plant such as buds and leaves have been mentioned to be applied for various suggestion instances. In addition, the juice of this plant has been reported in April to be used for the treatment as well.

Matricaria chamomilla L. was recorded exclusively in July, 1988. Its flowers have a great spectrum of suggestion instances that are coordinated with a big variety of general disease categories as well.

Speaking about the most frequently mentioned months in the rubric, it is important to say about July and September with their 103 and 96 records that demonstrate the largest part of the taxa. April, August and June share more or less proportional number of records – 59, 53 and 50 respectively.

Indeed, spring, summer and autumn are the seasons characterized by a big number of possibilities to procure different medicinal plants in the Pechorsky District according to the pharmacist's advices listed in the rubric: *Arctium lappa* L. (35 records, 8.5%) and *Hypericum perforatum* L. (26 records, 6.3%) are mentioned exceptionally in June and August. Instead, such plants as *Potentilla erecta* (L.) Raeusch., *Origanum vulgare* L., *Malus domestica (*Suckow) Borkh., *Armoracia rusticana* G.Gaertn., B.Mey. & Scherband and a few others have been mentioned only in autumn months, September and October. Less presented in the rubric are definitely May, March and February. The winter season can be called as "dead" one for the announcements of the plants.

Making the systematization of the extracted data in the RAWGraphs, I have noticed a group of plants that have been registered only once during the described period. Those plants are: *Equisetum arvense* L., mentioned in September (1990), *Bidens tripartita* L., *Tussilago farfara* L. and *Vaccinium myrtillus* L., each one listed in June (1986).

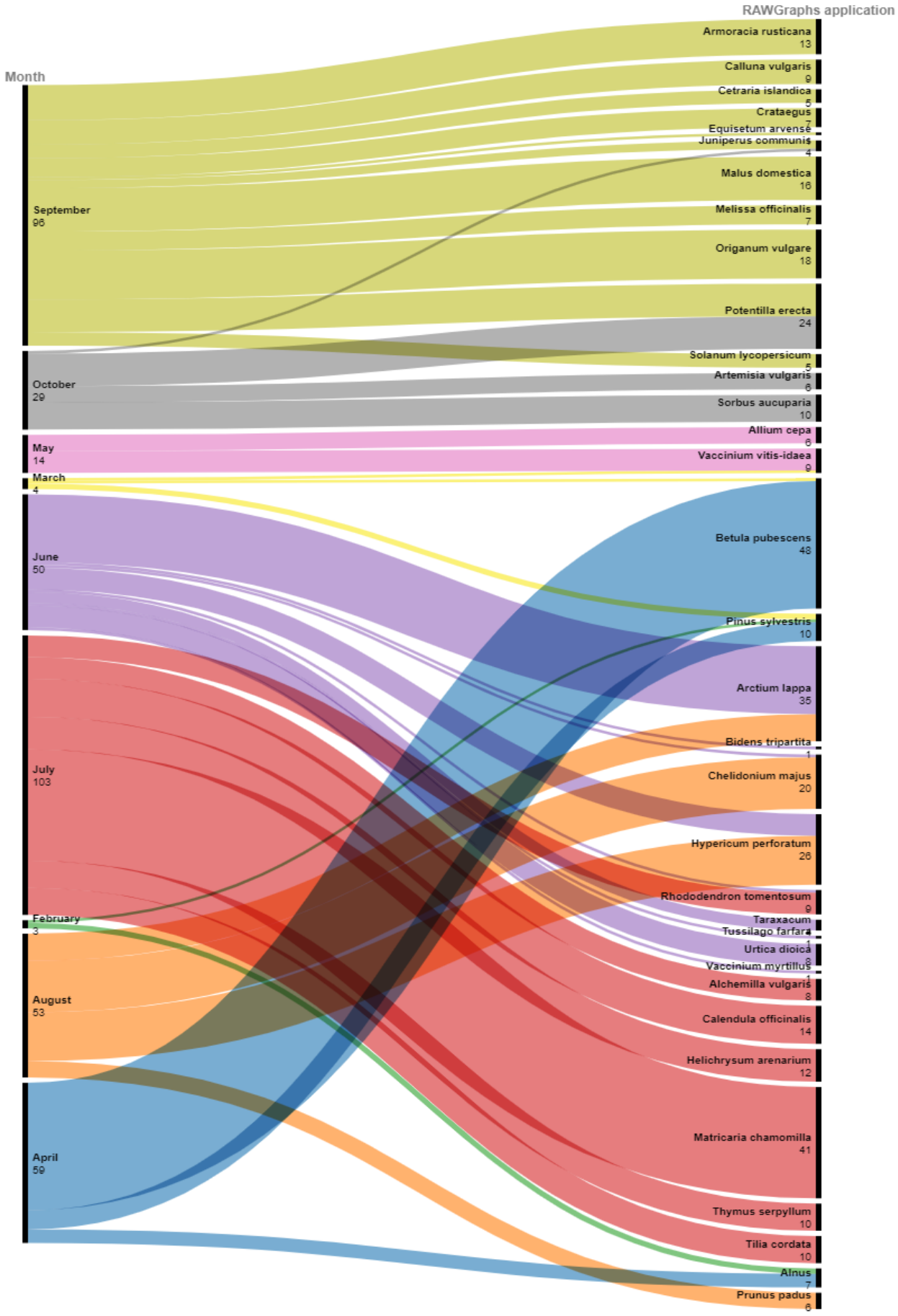


Fig. 4: Distribution of taxa records number per months (GP rubric)

Overall, 395 different suggestion instances of the various medicinal plants have been registered in the rubric. Figure 5 illustrates general disease categories (further GDC) into which all the suggestion instances have been finally categorized. Two categories show the biggest part of general disease records (further GDRs): Digestive (112 GDRs, 27.9%) and Skin (87 GDRs, 21.7%). General and Respiratory categories are represented with 48 GDRs and 32 GDRs that are amount to 11.9% and 8% respectively. Cardiovascular and Endocrine are accounted for by 25 GDRs each. There are five categories that provide the smallest number of records: FGenital (4 GDRs), Blood (3 GDRs), Eye (2 GDRs) and Ear with only one record being registered in the rubric.

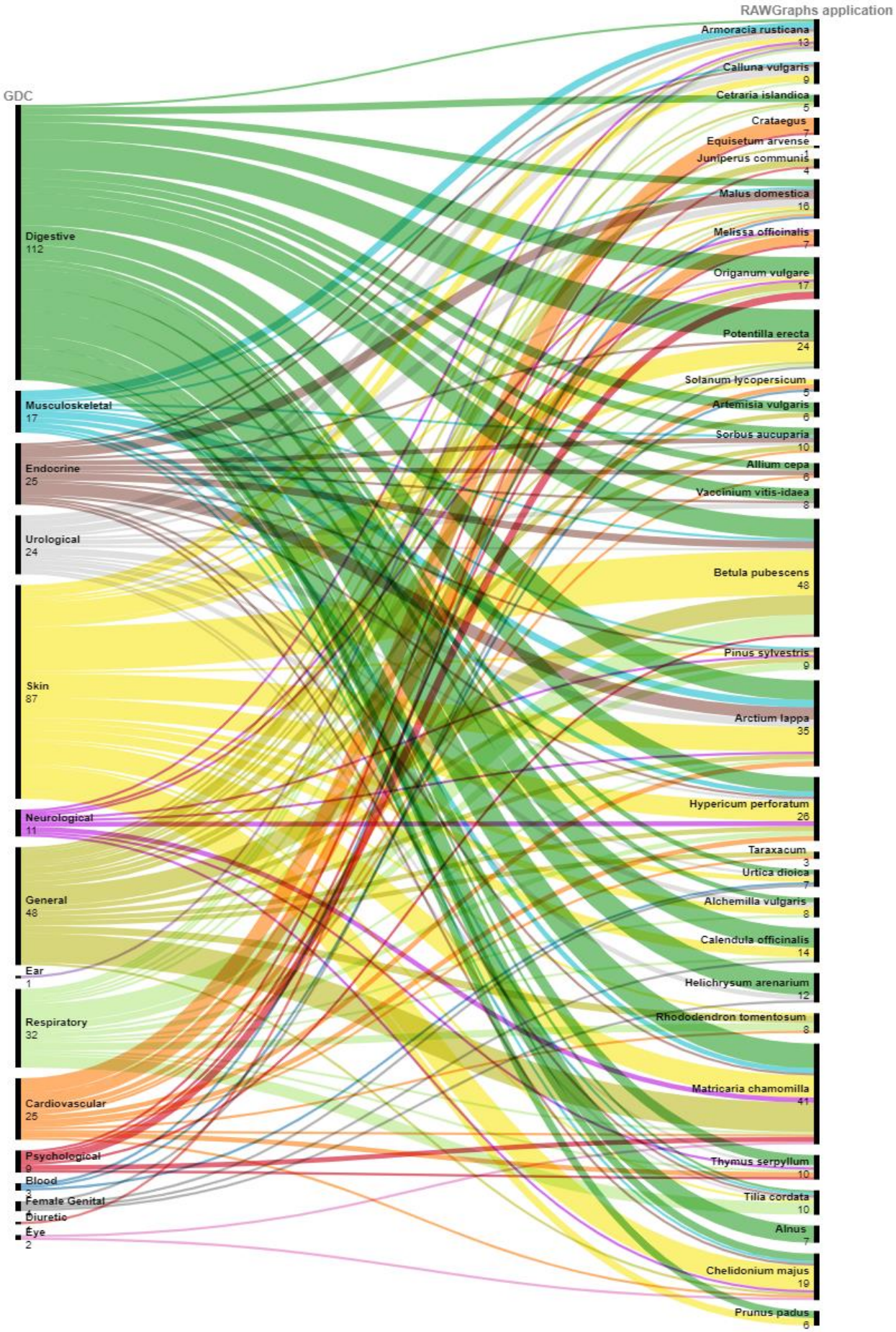


Fig. 5: Distribution of taxa records number per general disease categories (GP rubric)

4.2.2 Procurement Office analysis

Concerning Procurement Office rubric, there are the following groups of announcements that can be classified by the provided data:

- Plants purchased by PO from the locals;
- Plants selling by PO and competitions organized by PO with several categories of premium.

The first group is represented by the following distribution of the plants' families and taxa records in 1976-1990. The largest portion of records (97 Rs, 23% of 420 Rs) has been registered in 1987, where the biggest part is accounted for Rosaceae, the most mentioned plant family in that period. It is represented by 79 records that is 20% of all families being registered. The next quite big part of plants is accounted for by 84 records (20%) in 1983, where the largest family is placed by Ericaceae. It is the second most mentioned plant family with its 73 records (17.3%), followed by Asteraceae (53 Rs, 12.6%) and Solanaceae (30 Rs, 7.1%), where 100% have been covered exceptionally by *Solanum tuberosum* L. As an interesting detail, there were three years (1985, 1989 and 1990) that contained equal number of records (29 each, 7%). The same amount of percentage is accounted for by Grossulariaceae, that includes three taxa of Ribes: *Ribes rubrum* L. and *Ribes uva-crispa* L., with 18 records (62%) that are proportionally divided by these taxa and *Ribes nigrum* L., with its 11 records (38% of the family). Three types of Vaccinium have been registered in Ericaceae family as well: *Vaccinium myrtillus* L. (22 Rs, 30% of the family), *Vaccinium vitis-idaea* L. (19 Rs, 26%) and *Vaccinium oxycoccos* L. (16 Rs, 21.9%).

Additionally, it is important to say that there were not only productive years of the PO rubric announcements with an increased variety of mentioned taxa but also vice versa, when the was the decrease of the rubric's announcements. For instance, only 7 records (1.6%) including three taxa (*Solanum tuberosum* L., *Alnus* Mill. and *Salix* L.) have been published in 1982. As for 1976 and 1977, the number of announcements was scarce as well: four and two records included *Allium cepa* L. in 1976 and *Solanum tuberosum* L. (both years).

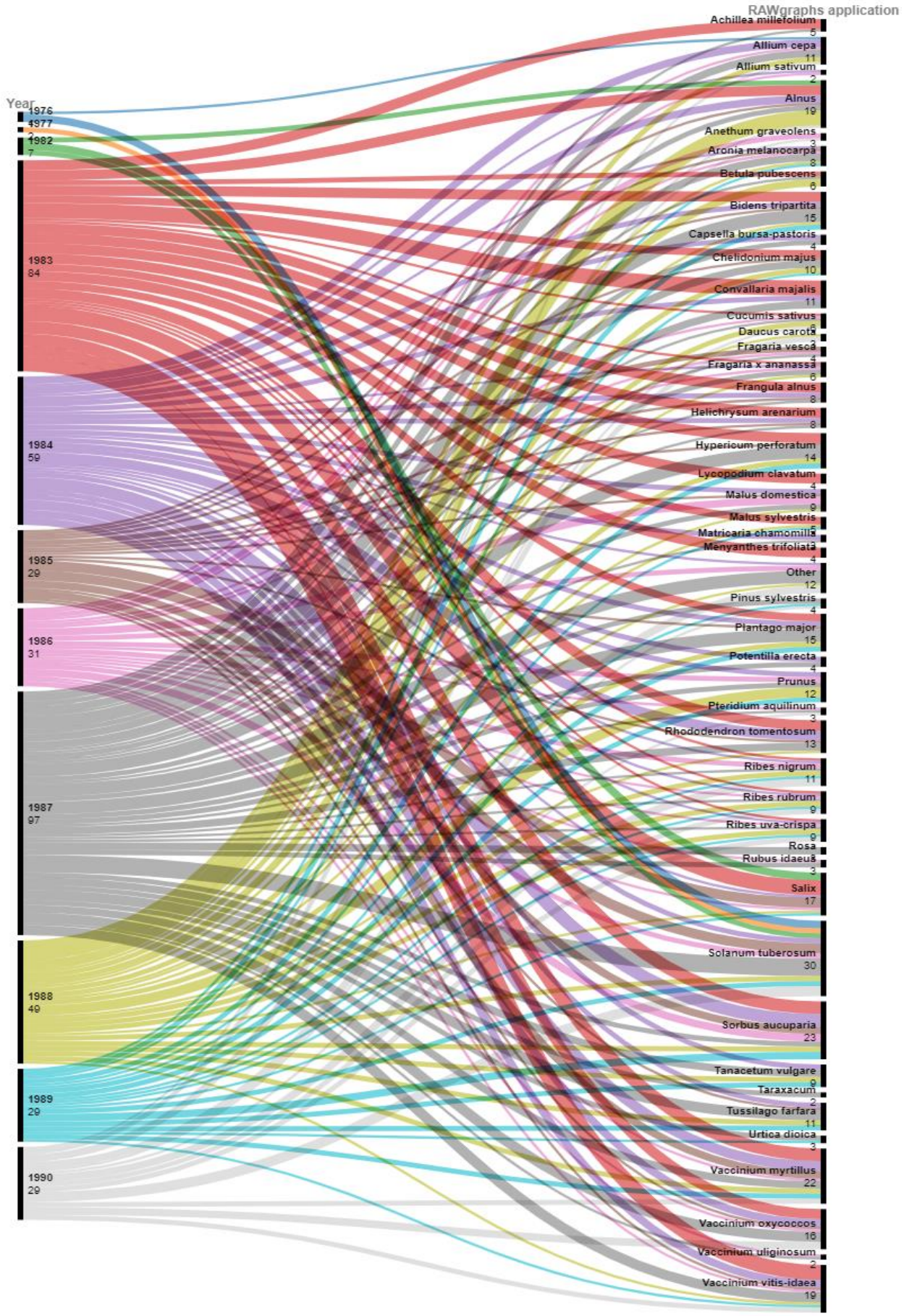


Fig. 6: Distribution of taxa records number per years (PO rubric)

The announcement distribution by months demonstrated a particular tendency described below. The largest part of records has been placed in July (148 Rs, 35.2%) and August (105 Rs, 25%). These months were followed by September and June (51 Rs, 12.1% and 36 Rs, 8.6% respectively). As for the spring season, it has not been fruitful of PO rubric announcements. Concerning winter, there is a similarity with GP rubric: there is no records in January and very few in both: December and February. November seems the "poorest" month as well: just two records of *Alnus* Mill.

Figures 6 and 7 contain a particular category of plants that is called Other. This particular category includes 12 taxa that have been listed only once in the PO rubric of the newspaper. The majority of them has been registered exclusively in Procurement office rubric (*Beta vulgaris* L., *Brassica oleracea* L., *Raphanus* L., *Petroselinum crispum* (Mill.) Fuss, *Apium graveolens* L., *Arctostaphylos uva-ursi* (L.) Spreng., *Valeriana officinalis* L., *Acorus calamus* L., *Viburnum opulus* L. and *Prunus cerasus* L.) while two plants have been recorded in Green Pharmacy as well (*Tilia cordata* Mill. and *Crataegus* L.).

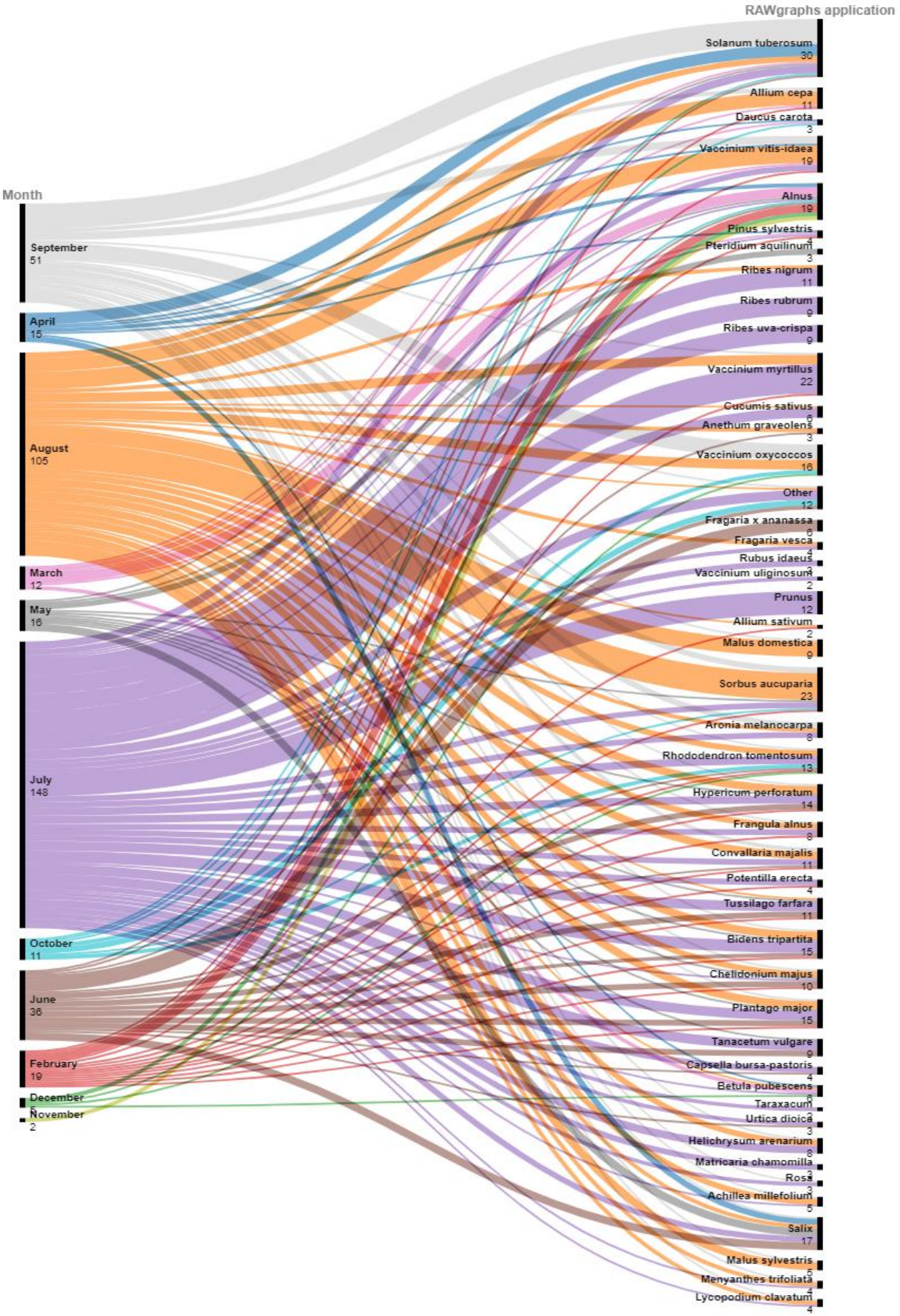


Fig. 7: Distribution of taxa records number per months (PO rubric)

It is quite crucial to notice that the announcements of Procurement office rubric included several groups of comments regarding some categories of plants. Figure 8 illustrates the distribution of taxa per comments category. For example, it is clearly seen that the majority of comments are organized in the following three groups:

- Medicinal plants, freshly picked and dry, in unlimited quantity;
- Medicinal plants, dry;
- Medicinal plants harvesting calendar (March to October).

There were particular comments for precise plants. The comment called Description, harvesting time, harvesting methods has been addressed to the announcement written in July, 1983 by M. Kovalenko for the following plants: *Hypericum perforatum* L., *Bidens tripartita* L., *Menyanthes trifoliata* L., *Achillea millefolium* L., *Helichrysum arenarium* (L.) Moench, *Frangula alnus* Mill., *Vaccinium myrtillus* L., *Sorbus aucuparia* L. and *Lycopodium clavatum* L. The author described in detail where locals can harvest the plants, the right time for it as well as the most correct harvesting method.

As for *Pteridium aquilinum* (L.) Kuhn, the author of the PO rubric has mentioned that it was in high demand on the foreign market in that period and the instruction was given for harvesting this plant (May, 1986). Besides, a collecting contest has been organized for the successful implementation of the plan to harvest and pickle it (May, 1987).

Another announcement published in August, 1986 contained a comment about aromatic plants that have been procured in unlimited quantity: *Anethum graveolens* L., *Allium sativum* L. and *Ribes nigrum* L.

There were three announcements that reported about mass purchasing of *Fragaria x ananassa* (Duchesne ex Weston) Duchesne ex Rozier from locals. They have been registered in June, two of them in 1987 and one in 1988. The interesting detail is that even though *Fragaria x ananassa* is a cultivated type of berries, there was no indications about it. Nevertheless, there was one announcement (July, 1989) concerning *Ribes nigrum* L., where it was claimed as cultivated berry.

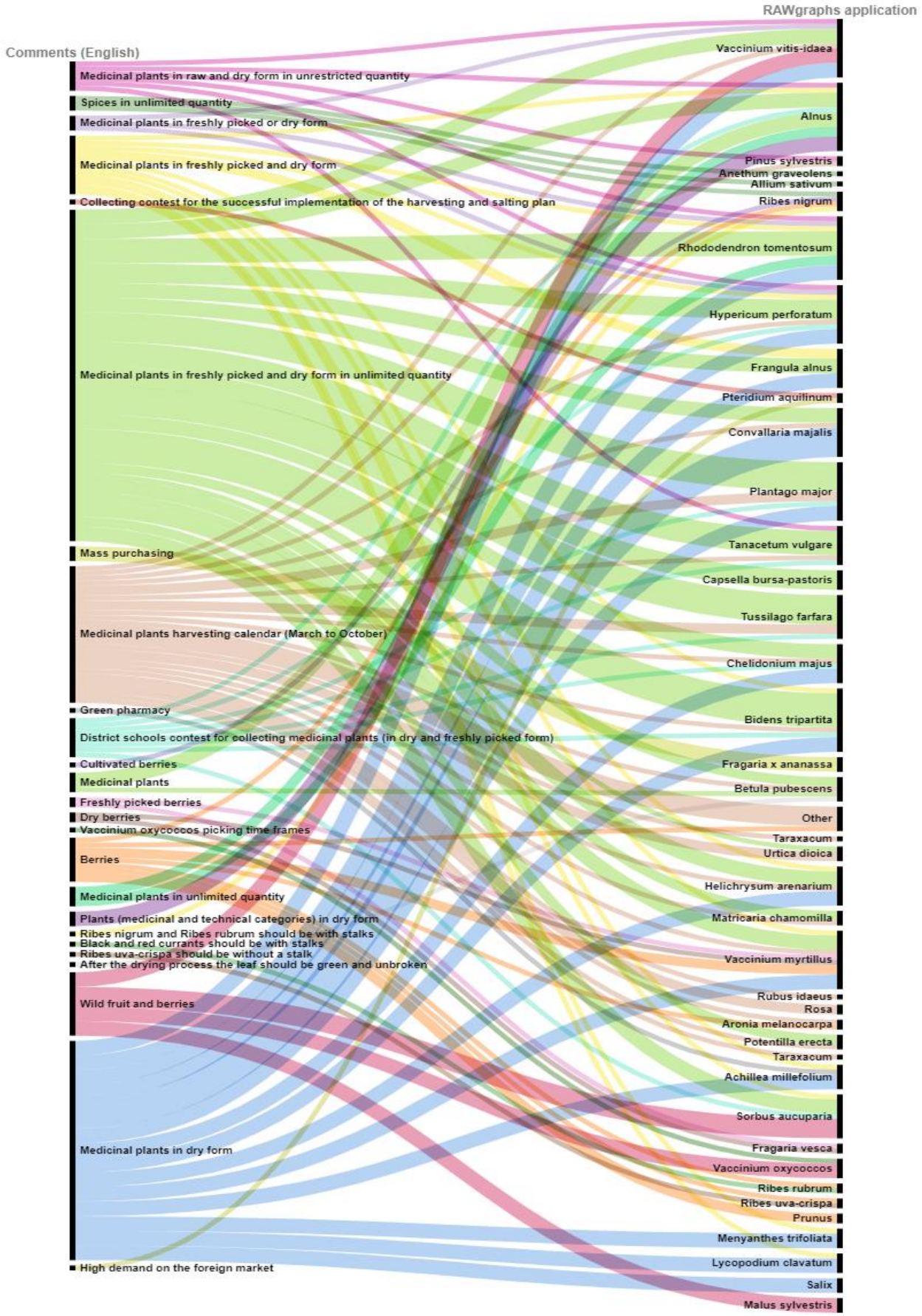


Fig. 8: Distribution of taxa per comments category (PO rubric)

Talking about Grossulariaceae family, announcements about Ribes procurement process have the comments with indications of the berries conditions to be procured:

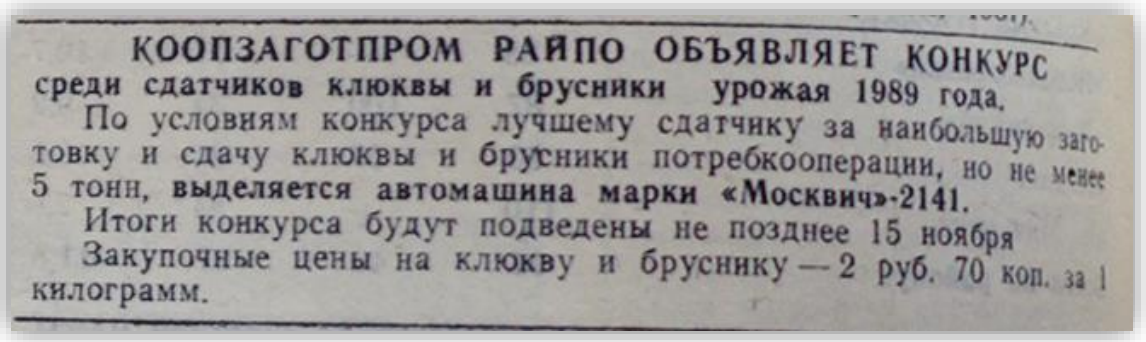
- Blackcurrant [Ribes nigrum] and redcurrant [Ribes rubrum] should be with strigs;
- Gooseberry [Ribes uva-crispa] should be stripped of the strigs.

In May, 1988 the announcement of medicinal plants that had to be procured by organizing a contest among local schools was published. The taxa to harvest were the following ones: *Tussilago farfara* L., *Alnus* Mill., *Plantago major* L., *Sorbus aucuparia* L., *Tanacetum vulgare* L., *Bidens tripartita* L., *Hypericum perforatum* L. and *Chelidonium majus* L.

Table 1: List of the plants with the associated premium of their procurement and years when it was reported

Latin name, Family	**Plant name used in the source**	**Goods as a premium from the procurement office**	**Years**
Alnus Mill., Betulaceae	Ольха (Ol'kha)	Canning lids	1988
Chelidonium majus L., Papaveraceae	Чистотел (Chistotel)	Metal lids	1988
Hypericum perforatum L., Hypericaceae	Зверобой (Zveroboi)		
Plantago major L., Plantaginaceae	Подорожник (Podorozhnik)		
Tanacetum vulgare L., Asteraceae	Пижма (Pizhma)		
Tussilago farfara L., Asteraceae	Мать-и-мачеха (Mat'-i-machekha)		
Salix L., Salicaceae	Ива (Iva)	Active deliverers will be sold high demand goods	1985
		Canning lids	1985
		Active deliverers will be given a priority to purchase deficit goods	1984
		Chainsaw ‘Druzhba’ will be sold for 2 tons of bark	1983
		Chainsaws ‘Druzhba’, metal lids and other goods will be sold to active bark deliverers	1982

Some of the plants mentioned above were listed in the second group of announcements that is called Plants selling by PO and competitions organized by PO with several categories of premium. Table 1 illustrates whose collectors were awarded by special premium. There were various kinds of goods such as canning and metal lids, which were very useful in that period of time for making home-made preserves (jams of berries, fruit and vegetables). Speaking about vegetables, *Cucumis sativus* L. was stated as the most popular one for marinades and pickles. As it can be seen from the table, the procurement of *Salix* L. was awarded with a variety of premium, starting from the lids and ending up with high demand goods and chainsaw 'Druzhba' (a state-of-art instrument for soviet people that was difficult to source and buy due to high demand as well as the majority of goods in that time).



КООПЗАГОТПРОМ РАЙПО ОБЪЯВЛЯЕТ КОНКУРС
среди сдатчиков клюквы и брусники урожая 1989 года.

По условиям конкурса лучшему сдатчику за наибольшую заготовку и сдачу клюквы и брусники потребкооперации, но не менее 5 тонн, **выделяется автомашина марки «Москвич»-2141.**

Итоги конкурса будут подведены не позднее 15 ноября

Закупочные цены на клюкву и бруснику — 2 руб. 70 коп. за 1 килограмм.

Fig. 9: Procurement office announcement published in the newspaper (August 1989)

There was an extraordinary announcement represents by figure 9 about such a premium as a car. It was published in 1989 highlighting a competition among the local harvesters of Vaccinium oxycoccos and Vaccinium vitis-idaea. In the announcement it is said that the best harvester would have been awarded a car 'Moskvich-2141' for the largest amount of berries to be procured (but not less than 5 tons). There was the deadline for the competition results - they were to be summed up no later than 15 November. Also, the procurement prices are announced - 2 rubles 70 kopecks for 1 kilo of berries.

Table 2: Extract of PO rubric in 1976-1990 with botanical name of the plants, their local names, parts and years when the announcements of their procurement process were published

Latin name, Family	**Plant name used in the source**	**Part of the plant**	**Years**
Achillea millefolium L., Asteraceae	Тысячелистник (Tysiachelistnik)	Aerial parts, leaves	1983, 1987
Acorus calamus L., Acoraceae	Аир болотный (Air bolotnyi)	Root	1987
Allium cepa L., Amaryllidaceae	Лук репчатый (Luk repchatyi)	Bulbs	1976, 1984, 1986, 1987, 1988, 1990
Allium sativum L., Amaryllidaceae	Чеснок (Chesnok)	Buds	1984, 1986
Alnus Mill., Betulaceae	Ольха (Ol'kha)	Female catkins	1982, 1983, 1984, 1985, 1987, 1988, 1990
Anethum graveolens L., Apiaceae	Укроп (Ukrop)	Aerial parts	1986, 1990
Apium graveolens L., Apiaceae	Сельдерей (Sel'derei)	Aerial parts	1986
Arctostaphylos uva-ursi (L.) Spreng., Ericaceae	Толокнянка (Tolokнianka)	Aerial parts	1987
Aronia melanocarpa (Michx.) Elliott, Rosaceae	Арония (Aroniia), черноплодная рябина (chernoplodnaia riabina)	Fruit	1984, 1985, 1986, 1987, 1988, 1989
Beta vulgaris L., Amaranthaceae	Свекла столовая (Svekla stolovaia)	Root	1990
Betula pubescens Ehrh., Betulaceae	Береза белая (Bereza belaia)	Leaves, buds	1983, 1987, 1988
Bidens tripartita L., Asteraceae	Череда (Chereda)	Aerial parts	1983, 1984, 1985, 1987, 1988, 1989
Brassica oleracea L., Brassicaceae	Капуста (Kapusta)	Fruit	1990
Capsella bursa-pastoris (L.) Medik., Brassicaceae	Пастушья сумка (Pastush'ia sumka)	Aerial parts	1984, 1987
Chelidonium majus L., Papaveraceae	Чистотел (Chistotel)	Aerial parts	1983, 1985, 1987, 1988, 1989
Convallaria majalis L., Asparagaceae	Ландыш (Landysh)	Aerial parts, leaves	1983, 1984, 1985, 1987

Crataegus L., Rosaceae	Боярышник (Boiaryshnik)	Fruit	1987
Cucumis sativus L., Cucurbitaceae	Огурцы (Ogurtsy)	Fruit	1983, 1986, 1987, 1988, 1990
Daucus carota L., Apiaceae	Морковь (Morkov')	Fruit	1988, 1990
Fragaria vesca L., Rosaceae	Земляника (Zemlianika)	Fruit	1985, 1986, 1987
Fragaria x ananassa (Duchesne ex Weston) Duchesne ex Rozier, Rosaceae	Клубника (Klubnika)	Fruit	1983, 1984, 1986, 1987, 1988
Frangula alnus Mill., Rhamnaceae	Крушина (Krushina)	Bark	1983, 1984, 1985, 1987
Helichrysum arenarium (L.) Moench, Asteraceae	Бессмертник (Bessmertnik)	Flowers	1983, 1984, 1985, 1987
Hypericum perforatum L., Hypericaceae	Зверобой обыкновенный (Zveroboi obyknovennyi)	Aerial parts	1983, 1985, 1987, 1988, 1989
Lycopodium clavatum L., Lycopodiaceae	Ликопидий (Likopidii)	Spores	1983
Malus domestica (Suckow) Borkh., Rosaceae	Яблоня домашняя (Iablonia domashniaia)	Fruit	1984, 1985, 1986, 1987, 1988, 1989
Malus sylvestris (L.) Mill., Rosaceae	Яблоня (дичок)* (Iablonia (dichok)*	Fruit	1983, 1988
Matricaria chamomilla L., Asteraceae	Ромашка (Romashka)	Flowers	1984, 1987
Menyanthes trifoliata L., Menyanthaceae	Трифоль (Trifol')	Leaves	1983
Petroselinum crispum (Mill.) Fuss, Apiaceae	Петрушка (Petrushka)	Aerial parts	1986
Pinus sylvestris L., Pinaceae	Сосна (Sosna)	Buds	1987, 1989, 1990
Plantago major L., Plantaginaceae	Подорожник (Podorozhnik)	Leaves	1983, 1984, 1985, 1987, 1988, 1989
Potentilla erecta (L.) Raeusch., Rosaceae	Дубровка (Dubrovka), Калган, (Kalgan), Лапчатка (Lapchatka)	Root	1984, 1987
Prunus cerasus L., Rosaceae	Вишня (Vishnia)	Fruit	1984
Prunus L., Rosaceae	Слива белая (Sliva belaia) Слива синяя (Sliva siniaia)	Fruit	1984, 1986, 1987, 1988, 1989

Pteridium aquilinum (L.) Kuhn, Dennstaedtiaceae	Папоротник-орляк (Paporotnik-orliak)	Aerial parts	1986, 1987, 1990
Raphanus L., Brassicaceae	Редька (Red'ka)	Fruit	1990
Rhododendron tomentosum Harmaja, Ericaceae	Багульник (Bagul'nik)	Aerial parts	1983, 1984, 1985, 1987, 1988
Ribes nigrum L., Grossulariaceae	Смородина черная (Smorodina chernaia)	Fruit, leaves	1983, 1984, 1986, 1987, 1988, 1990
Ribes rubrum L., Grossulariaceae	Смородина красная (Smorodina krasnaia)	Fruit	1983, 1984, 1986, 1987, 1988, 1989, 1990
Ribes uva-crispa L., Grossulariaceae	Крыжовник (Kryzhovnik)	Fruit	1983, 1984, 1986, 1987, 1988, 1989, 1990
Rosa L.., Rosaceae	Шиповник (Shipovnik)	Fruit	1987
Rubus idaeus L., Rosaceae	Малина (Malina)	Fruit	1986, 1987
Salix L., Salicaceae	Ива (Iva)	Bark	1982, 1983, 1984, 1985, 1986, 1988, 1990
Solanum tuberosum L., Solanaceae	Картофель (Kartofel')	Tubers	1976, 1977, 1982, 1984, 1985, 1986, 1987, 1988, 1989, 1990
Sorbus aucuparia L., Rosaceae	Рябина обыкновенная (Riabina obyknovennaia)	Fruit	1983, 1984, 1985, 1986, 1987, 1988, 1989
Tanacetum vulgare L., Asteraceae	Пижма (Pizhma)	Flowers	1984, 1987, 1988, 1989
Taraxacum sect. Taraxacum F.H.Wigg., Asteraceae	Одуванчик (Oduvanchik)	Root	1987
Tilia cordata Mill., Malvaceae	Липа (Lipa)	Flowers	1987
Tussilago farfara L., Asteraceae	Мать-и-мачеха (Mat'-i-machekha)	Flowers, leaves	1984, 1985, 1987, 1988, 1989
Urtica dioica L., Urticaceae	Крапива (Krapiva)	Leaves	1987, 1989

Vaccinium myrtillus L., Ericaceae	Черника (Chernika)	Fruit	1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990
Vaccinium oxycoccos L., Ericaceae	Клюква (Kliukva)	Fruit	1983, 1984, 1985, 1986, 1987, 1990
Vaccinium uliginosum L., Ericaceae	Голубика (Golubika)	Fruit	1986, 1987
Vaccinium vitis-idaea L., Ericaceae	Брусника (Brusnika)	Fruit, Leaves, Aerial parts	1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990
Valeriana officinalis L., Caprifoliaceae	Валериана (Valeriana)	Root	1987
Viburnum opulus L., Viburnaceae	Калина (Kalina)	Fruit	1988

Iabloki (dichok)* - *Malus sylvestris* (or *Malus domestica* in case of abandonment/self-seeding/hybrid)

5. Discussion

5.1. Comparison of the newspaper's data with the 11th State Pharmacopoeia of the USSR (1987, 1990)

To begin with, it is significant to mention that this kind of research is a pioneering one. As a result, it was quite complicated to understand which context to apply for the recorded results in comparison with the results of other studies. However, I have considered several studies as the most valuable ones to create this type of thesis.

For instance, the research where the comparison of the present use of wild plants in food as well as in medicine in three rural regions of selected countries (Sweden, Ukraine and Russian Federation) was made by means of the interviewing the local residents and reporting the results obtained (Stryamets et al. 2015). Another significant work was concerning the representation of a folk medicine review in Karelia (north-west part of Russia) providing a folk medicine comparison by means of locals and describing a history of medicine in this region (Kolosova et al. 2022). Last but not least, the investigation of the changes in the use of the wild plants based on the local practices within the last 70 years in the Pechorsky District. The results of that research have been obtained by means of interviewing Setos and Russians during the field study (Belichenko et al. 2022). This study provided context to my thesis.

Regarding 'Medicinal Plants of the Russian Pharmacopoeia; their history and applications' Shikov et al. made the research based on the State Pharmacopoeia of the USSR, 11th edition (last issued in 1987 (part 1) and 1990 (part 2)). The Pharmacopoeia included 83 individual monographs of plants. The 10th edition of Pharmacopeia has been added to illustrate which plants have been already registered in 1968. However, the main goal of this comparison is to show the differences and similarities between the 11th edition and Green Pharmacy rubric data of 'Pechorskaia Pravda'.

Of 83 monographs 37 have already been recorded in the 10th edition of the State Pharmacopoeia. Regarding the Green Pharmacy rubric, quite small number of plants have been named there - 22

taxa (as Flores and Fructus Crataegi were counted as one plant with different application of its several parts). Of these 22 plants only three had no information about possible suggestion instances, so, they have not been classified using ICPC - 2: *Tussilago farfara* L., *Bidens tripartita* L. and *Vaccinium myrtillus* L. The explanation of this particular case is the following: the announcement has been named as 'Green Pharmacy' rubric but there was a question from the local woman addressed to the Procurement office staff. She has asked what medicinal plants are procured by the Pechory procurement office. The response was given by the procurement office merchandiser who has named those plants without any indication of the suggestion instances.

Table 3: Plants, including in the State Pharmacopoeia and in 'Pechorskaia Pravda'

Monograph title	**Latin name**	**Accepted name**	**Family (as in the State Pharmacopoeia of the USSR)**	**Pharmacological group**	**Ph XI**	**Ph X**	**Green Pharmacy rubric of the newspaper**	**Green Pharmacy General disease categories (defined by ICPC-2)**
1. CORMUS LEDI PALUSTRI	*Ledum palustre* L.	*Rhododendron tomentosum* Harmaja	Ericaceae	Expectorant	X		X	General, Respiratory, Skin, Cardiovascular
2. CORTEX FRANGULAE ALNI	*Frangula alnus* Mill.	*Frangula alnus* Mill.	Rhamnaceae	Laxative	X	X		
3. CORTEX QUERCUS	*Quercus* spp. (incl. *Quercus robur* L.)	*Quercus robur* L.	Fagaceae	Astringent	X	X		
4. CORTEX VIBURNI	*Viburnum opulus* L.	*Viburnum opulus* L.	Caprifoliaceae	Diuretic	X	X		
5. FLORES CALENDULAE	*Calendula officinalis* L.	*Calendula officinalis* L.	Asteraceae	Antiseptic and anti-inflammatory	X	X	X	Skin, Female Genital, Digestive, Respiratory
6. FLORES CENTAUREAE CYANI	*Centaurea cyanus* L.	*Centaurea cyanus* L.	Asteraceae	Diuretic	X			
7. FLORES CHAMOMILLAE	*Chamomilla recutita* (L.) Rauschert	*Matricaria chamomilla* L.	Asteraceae	Anti-inflammatory, spasmolytic	X		X	Cardiovascular, Digestive, Endocrine, Eye, General, Musculoskeletal, Neurological, Psychological, Respiratory, Skin
8. FLORES CRATAEGI	*Crataegus* spp. (incl. *Crataegus sanguinea* Pall.)	*Crataegus* spp.	Rosaceae	Cardiovascular	X	X	X	Cardiovascular, Psychological
9. FLORES HELICHRYSI ARENARII	*Helichrysum arenarium* (L.) Moench	*Helichrysum arenarium* (L.) Moench	Asteraceae	Choleretic	X	X	X	Digestive, Urological, Female Genital
10. FLORES SAMBUCI NIGRAE	*Sambucus nigra* L.	*Sambucus nigra* L.	Caprifoliaceae	Diaphoretic (sudorific)	X			

11. FLORES TANACETI	*Tanacetum vulgare* L.	*Tanacetum vulgare* L.	Asteraceae	Antihelminthic and choleretic	X			
12. FLORES TILIAE	*Tilia cordata* Mill.	*Tilia cordata* Mill.	Tiliaceae	Diaphoretic (sudorific)	X	X	X	Respiratory, Digestive, Musculoskeletal, Endocrine, Skin, Urological
	T. platyphyllos Scop.	*Tilia platyphyllos* Scop.	Tiliaceae	Diaphoretic (sudorific)				
13. FOLIA BELLADONNAE	*Atropa bella-donna* L.	*Atropa bella-donna* L.	Solanaceae	Cholinolytic (spasmolytic)	X	X		
14. FOLIA DIGITALIS	*Digitalis* spp. (incl. *Digitalis purpures* L.)	*Digitalis purpurea* L.	Scrophulareaceae	Cardiotonic	X	X		
15. FOLIA EUCALYPTI VIMINALIS	*Eucalyptus viminalis* Labill.	*Eucalyptus viminalis* Labill.	Myrtaceae	Anti-inflammatory	X	X		
16. FOLIA FARFARAE	*Tussilago farfara* L.	*Tussilago farfara* L.	Asteraceae	Expectorant	X		X	
17. FOLIA HYOSCYAMI	*Hyoscyamus niger* L.	*Hyoscyamus niger* L.	Solanaceae	Cholinolytic (spasmolytic)	X	X		
18. FOLIA MENTHAE PIPERITAE	*Mentha piperita* L.	*Mentha × piperita* L.	Lamiaceae	Spasmolytic and choleretic	X	X		
19. FOLIA MENYANTHIDIS TRIFOLIATAE	*Menyanthes trifoliata* L.	*Menyanthes trifoliata* L.	Menyanthaceae	Bitterness (appetite stimulant) and choleretic	X	X		
20. FOLIA PLANTAGINIS MAJORIS	*Plantago major* L.	*Plantago major* L.	Plantaginacea	Expectorant	X			
21. FOLIA ORTHOSIPHONIS STAMINEI	*Orthosiphon stamineus* Benth.	*Orthosiphon aristatus* (Blume) Miq.	Lamiaceae	Diuretic	X			
22. FOLIA SALVIAE	Salvia officinalis L.	Salvia officinalis L.	Lamiaceae	Anti-inflammatory	X	X		
23. FOLIA	*Cassia acutifolia*	*Senna alexandrina* Mill.	Fabaceae	Laxative	X	X		

SENNAE	Del.							
24. FOLIA STRAMONII	*Datura stramonium* L.	*Datura stramonium* L.	Solanaceae.	Cholinolytic (spasmolytic)	X	X		
25. FOLIA URTICAE	*Urtica dioica* L.	*Urtica dioica* L.	Urticaceae	Haemostatic	X		X	Digestive, Skin, Female Genital, Urological, Blood
26. FOLIA UVAE URSI	*Arctostaphylos uva-ursi* (L.) Spreng.	*Arctostaphylos uva-ursi* (L.) Spreng.	Ericaceae	Diuretic	X	X		
27. FOLIA VITIS-IDAEA	Vaccinium vitis-idaea L.	*Vaccinium vitis-idaea* L.	Ericaceae	Diuretic	X		X	Digestive, Endocrine, Urological
28. FRUCTUS ALNI	*Alnus incana* (L.) Moench	*Alnus incana* (L.) Moench	Betulaceae	Astringent	X		X	Digestive
	A. glutinosa (L.) Gaertn.	A. glutinosa (L.) Gaertn.	Betulaceae	Astringent				
29. FRUCTUS ANETHI GRAVEOLENTIS	*Anethum graveolens* L.	*Anethum graveolens* L.	Apiaceae	Not claimed, Spasmolytic∗	X			
30. FRUCTUS ANISI VULGARIS	*Pimpinella anisum* L.	*Pimpinella anisum* L.	Apicae	Not claimed, Expectorant∗	X	X		
	Anisum vulgare Gaertn.	*Pimpinella anisum* L.						
31. FRUCTUS CARVI	*Carum carvi* L.	*Carum carvi* L.	Apiaceae	Not claimed, Spasmolytic∗	X			
32. FRUCTUS CRATAEGI	*Crataegus* spp. (including *Cratageus laevigata* (Poir.) DC.)	*Crataegus* spp.	Rosaceae	Cardiovascular	X	X	X	Cardiovascular, Psychological
33. FRUCTUS FOENICULI	*Foeniculum vulgare* Mill.	*Foeniculum vulgare* Mill.	Apiaceae	Not claimed, Spasmolytic∗	X	X		
34. FRUCTUS JUNIPERI	*Juniperus communis* L.	*Juniperus communis* L.	Cupressaceae	Diuretic	X	X	X	Diuretic, General
35. FRUCTUS MYRTILLI	*Vaccinium myrtillus* L.	*Vaccinium myrtillus* L.	Ericaceae	Astringent	X		X	

36. FRUCTUS PADI	*Padus avium* Mill.	*Prunus padus* L.	Rosaceae	Astringent	X			
	P. asiatica Kom.	*Prunus padus* L.	Rosaceae	Astringent				
37. FRUCTUS RHAMNI CATHARTICAE	*Rhamnus cathartica* L.	*Rhamnus cathartica* L.	Rhamnaceae	Laxative	X	X		
38. FRUCTUS ROSAE	*Rosa* spp. (incl. *Rosa majalis* Herrm.)	*Rosa majalis* Herrm.	Rosaceae	Polyvitamin	X	X		
39. FRUCTUS SORBI	*Sorbus aucuparia* L.	*Sorbus aucuparia* L.	Rosaceae	Polyvitamin	X		X	General, Digestive, Musculoskeletal, Endocrine, Cardiovascular, Urological
40. FRUCTUS VIBURNI	*Viburnum opulus* L.	*Viburnum opulus* L.	Caprifoliaceae	Diaphoretic, anti-inflammatory	X			
41. GEMMAE BETULAE	*B. pubescens* Ehrh.	*Betula pubescens* Ehrh.	Betulaceae	Diuretic	X		X	Digestive, Endocrine, General, Musculoskeletal, Psychological, Respiratory, Skin, Urological
	Betula pendula Roth	*Betula pendula* Roth	Betulaceae	Diuretic				
42. GEMMAE PINI	*Pinus silvestris* L.	*Pinus silvestris* L.	Pinaceae	Expectorant	X		X	General, Respiratory, Musculoskeletal, Endocrine, Neurological, Skin
43. HERBA ADONIDIS VERNALIS	*Adonis vernalis* L.	*Adonis vernalis* L.	Ranunculaceae	Cardiotonic	X	X		
44. HERBA ARTEMISIAE ABSINTHII, FOLIA ARTEMISIAE ABSINTHII	*Artemisia absinthium* L.	*Artemisia absinthium* L.	Asteraceae	Bitterness (appetite stimulant) and choleretic	X			

45. HERBA BIDENTIS	*Bidens tripartita* L.	*Bidens tripartita* L.	Asteraceae	Anti-inflammatory for external use	X		X	
46. HERBA BURSAE PASTORIS	*Capsella bursa - pastoris* (L.) Medik.	*Capsella bursa - pastoris* (L.) Medik.	Brassicaceae	Not claimed, Haemostatic∗	X			
47. HERBA CHELIDONII	*Chelidonium majus* L.	*Chelidonium majus* L.	Papaveraceae	Anti-inflammatory for external use	X		X	Skin, Eye, Digestive, Neurological, Endocrine, General, Musculoskeletal, Cardiovascular
48. HERBA CENTAURII	*Centaurium* spp. (incl. *Centaurium erythraea* Rafn)	*Centaurium erythraea* Rafn	Centianaceae	Bitterness (appetite stimulant)	X			
49. HERBA CONVALLARIAE, FOLIA CONVALLARIAE, FLORES CONVALLARIAE	*Convallaria* spp. (incl. *Convallaria majalis* L.)	*Convallaria majalis* L.	Liliaceae	Cardiotonic	X	X (HERBA, without FOLIA and FLORES)		
50. HERBA EQUISETI ARVENSIS	*Equisetum arvense* L.	*Equisetum arvense* L.	Equisetaceae	Diuretic	X		X	General
51. HERBA GNAPHALII ULIGINOSI	*Gnaphalium uliginosum* L.		Asteraceae	Not claimed, Hypotensive, anti-inflammatory, choleretic∗	X	X		
52. HERBA HYPERICI	*Hypericum spp.* (incl. *Hypericum perforatum* L.)	*Hypericum perforatum* L.	Hypericaceae	Astringent, antiseptic	X	X	X	Skin, Digestive, Neurological, Endocrine, General, Musculoskeletal, Cardiovascular, Urological, Respiratory

53. HERBA MILLEFOLII	*Achillea millefolum* L.	*Achillea millefolum* L.	Asteracea	Not claimed, Haemostatic, anti-inflammatory	X			
54. HERBA LEONURI	*Leonurus* spp. (incl. *Leonurus cardiaca* L.)	*Leonurus cardiaca* L.	Lamiaceae	Sedative	X	X		
55. HERBA ORIGANI	*Origanum vulgare* L.	*Origanum vulgare* L.	Lamiaceae	Expectorant	X		X	Psychological, General, Digestive, Respiratory, Urological, Skin, Neurological
56. HERBA POLYGONI AVICULARIS	*Polygonum aviculare* L.	*Polygonum aviculare* L.	Polygonaceae	Not claimed, Diuretic∗	X			
57. HERBA POLYGONI HYDROPIPERIS	*Polygonum hydropiper* L.	*Persicaria hydropiper* (L.) Delarbre	Polygonaceae	Haemostatic	X	X		
58. HERBA POLYGONI PERSICARIAE	*Polygonum persicaria* L.	*Persicaria lapathifolia* (L.) Delarbre	Polygonaceae	Not claimed, medicine of natural origin	X			
59. HERBA THERMOPSIDIS LANCEOLATAE	*Thermopsis lanceolata* R. Br.	*Thermopsis lanceolata* R. Br.	Fabaceae	Not claimed, medicine of natural origin	X	X		
60. HERBA SERPYLLI	*Thymus serpyllum* L.	*Thymus serpyllum* L.	Lamiaceae	Expectorant	X		X	Digestive, Urological, Respiratory, Neurological, Cardiovascular, Psychological
61. HERBA THYMI VULGARIS	*Thymus vulgaris* L.	*Thymus vulgaris* L.	Lamiaceae	Expectorant	X			
62. HERBA VIOLAE	*Viola tricolor* L.	*Viola tricolor* L.	Violaceae	Expectorant	X			
	V. arvensis Murr.	*Viola arvensis* Murray	Violaceae	Expectorant				
63. INONOTUS OBLIQUUS	*Inonotus obliquus* (Pers.) Pil.	*Inonotus obliquus* (Fr.) Pilát	Hymenochaetaceae	Not claimed, (Regulation of metabolism, anti-inflammatory) ∗	X			

64. RADICES ALTHAEAE	Althaea officinalis L.	Althaea officinalis L.	Malvaceae	Expectorant	X	X		
	A. armeniaca Ten.	*Althaea armeniaca* Ten.	Malvaceae	Expectorant				
65. RADICES ARALIAE MANDSHURICAE	*Aralia elata* (Miq.) Seem. and *A. mandshurica* Rupr. et maxim.	*Aralia elata* (Miq.) Seem.	Araliaceae	Not claimed, (Tonic)∗	X			
66. RADICES GINSENG	*Panax ginseng* C. A. Mey.	*Panax ginseng* C. A. Mey.	Araliaceae	Tonic	X	X		
67. RADICUS ONONIDIS	*Ononis arvensis* L.	*Ononis arvensis* L.	Fabaceae	Not claimed, medicine of natural origin	X			
68. RADICES RHEI	*Rheum palmatum* L. var t*anguticum* Maxim.	*Rheum palmatum* L.	Polygonaceae	Laxative	X	X		
69. RADICES TARAXACI	*Taraxacum officinale* Wigg.	*Taraxacum sect. Taraxacum* F.H.Wigg.	Asteraceae	Bitterness (appetite stimulant) and choleretic	X		X	General, Cardiovascular
70. RHIZOMATA BERGENIAE	*Bergenia crassifolia* (L.) Fritsch	*Bergenia crassifolia* (L.) Fritsch	Saxifragaceae	Astringent, for external use	X			
71. RHIZOMATA BISTORTAE	*Polygonum bistorta* L.	*Bistorta officinalis* Delarbre	Polygonaceae	Astringent	X	X		
72. RHIZOMATA CALAMI	*Acorus calamus* L.	*Acorus calamus* L.	Araceae	Bitterness (appetite stimulant) and choleretic	X	X		
73. RHIZOMATA ET RADICES INULAE	*Inula helenium* L.	*Inula helenium* L.	Asteraceae	Expectorant	X			
74. RHIZOMATA CUM RADICIBUS POLEMONII	*Polemonium caeruleum* L.	*Polemonium caeruleum* L.	Polemoniaceae	Expectorant	X			
75. RHIZOMATA ET RADICES RHODIOLAE ROSEAE	*Rhodiola rosea* L.	*Rhodiola rosea* L.	Crassulaceae	Tonic	X			
76. RHIZOMATA	*Rubia tinctorum* L.	*Rubia tinctorum* L.	Rubiaceae	Not claimed,	X			

ET RADICES RUBIAE				Spasmolytic∗				
	R. iberica (Fish. ex DC). C. Koch	*Rubia tinctorum* L.	Rubiaceae	Not claimed, Spasmolytic∗				
77. RHIZOMATA CUM RADICIBUS VALERIANAE	*Valeriana officinalis* L.	*Valeriana officinalis* L.	Valerianaceae	Sedative	X	X		
78. SEMINA CUCURBITAE	*Cucurbita* spp. (incl. *Cucurbita pepo* L.)	*Cucurbita pepo* L.	Cucurbitaceae	Antihelminthic	X			
79. SEMINA LINI	*Linum usitatissimum* L.	*Linum usitatissimum* L.	Linaceae	Ambient	X			
80. SEMINA SCHISANDRAE	*Schisandra chinensis* (Turcz.) Baill.	*Schisandra chinensis* (Turcz.) Baill.	Schisandraceae	Tonic	X	X		
81. STROBILI PICEAE ABIETIS	*Picea abies* (L.) Karst.	*Picea abies* (L.) H.Karst.	Pinaceae	Anti-inflammatory	X			
82. STYLI CUM STIGMATIS ZEAE MAYDIS	*Zea mays* L.	*Zea mays* L.	Poaceae	Choleretic	X			
83. THALLI LAMINARIAE	*Laminaria saccharina* (L). Lam.		Laminariaceae	Laxative	X			

* Pharmacological group according to the on line State Register of Medicinal preparations. A.N. Shikov et al. / Journal of Ethnopharmacology 154 (2014) 481–536486

20 plants have been recorded in newspaper with suggestion instances written by local pharmacists in the announcements of the newspaper. *Rhododendron tomentosum* Harmaja in the newspaper's rubric was named as a labrador tea while in the research northern labrador tea and wild rosemary were also referred to this plant. The description of this shrub with evergreen leaves provided the data about its use in Russian traditional medicine. In the State Pharmacopoeia was stated that its shoots were applied in form of decoction or aqueous infusion. It has been listed in Expectorants pharmacological group as its infusion has been used for the treatment of various respiratory and lung disorders such as bronchitis, tuberculosis, asthma and whooping cough. In newspaper the author has listed its expectorant effect, too. Concerning other application in medicine, Shikov has mentioned its effect of seizures prevention, its usage as anthelmintic treatment, an ointment on the base of animal fats that applied topically in insect stings, scabies and even in eczema (Shikov et al. 2014). On the contrary, the pharmacist was listed only one suggestion instances that has been addressed to Skin category according ICPC-2: wound healing effect. As for the other categories I have indicated General group of diseases where three effects have been mentioned in the announcement: diaphoretic, analgesic and bactericidal. The diaphoretic effect has been also noticed in Shikov's studying. Moreover, the particular cases of wild rosemary essential oil usage has been named in Shikov's research. He has described the side effects of oil applied orally: it can provoke the irritation of kidneys, urinary tract and the gastrointestinal tract with diarrhea and vomiting. In the rubric, instead, *Rhododendron tomentosum* essential oil was described as a 'radical cure' to treat rhinitis and catarrh of upper respiratory tract. However, despite its positive and negative effects, both Shikov and the Pechory pharmasict have mentioned its toxic effects on the organism (dizziness, nausea, exhaustion, vomiting and loss of consciousness) as it stated as a poisonous plant due to toxic volatile compounds content. The conclusion that Shikov has done was about this plant's safety (especial chronic toxicity) and efficacy that were needed additional studies.

According to Pharmacopoeia, *Pinus silvestris* L. was included in Expectorants pharmacological category as well. Besides its expectorant effect, buds are widely used in Russian traditional medicine as slightly diuretic, for treating tuberculosis and chronic bronchitis, for aromatic baths to improve condition of skin and as arthritis supportive treatment. In 'Pechorskaia Pravda' rubric its diverse suggestion instances have been mentioned as well: it was claimed as rheumatism

local irritant, used for inhalation of upper respiratory tract disease, in gout and neuralgia treating, turpentine was listed as antimicrobial agent, decoction and tincture – for tuberculosis cure, decoction and tincture - for prevention of rash. This spectrum of *Pinus silvestris* application was categorized into the following groups: Musculoskeletal, Respiratory, General, Endocrine, Neurological and Skin. As *Pinus silvestris* aetheroleum was included in European Pharmacopoeia, Shikov has not discussed pharmacological profile of oil.

Two other expectorants such as *Origanum vulgare* L. and *Thymus serpyllum* L. included in the State Pharmacopoeia of the USSR have not been described in Shikov's research. Nevertheless, their suggested uses have been discussed in GP rubric of 'Pechorskaia Pravda' by local pharmacists.

Origanum vulgare L. was described as a medicinal plant that can provide a calming effect on the central nervous system and to be a cure to prevent insomnia. These suggestion instances have been put in Psychological category of diseases. As for General category the following possible application was given: it was stated that this plant significantly increases the secretion of sweat and digestive glands in the bronchi and treats scrofula. Possible usage for skin was presented by compresses to treat furuncles and pustules. The pharmacists also suggested other uses such as: diuretic, bronchitis and other respiratory tract illnesses remedy, headaches treatment. However, the largest category of diseases claimed by specialist was the Digestive one. This category has covered a big portion of suggestion instances: *Origanum vulgare* can be applied as antipyretic and anthelmintic, as a toothache remedy, to stimulate appetite, to increase intestinal peristalsis and for reducing secretion of gastric juice.
For Thymus serpyllum L. a few suggestion instances from Digestive category have been registered as well. There were stomach function disorder, flatulence, abdominal cramps and gastrointestinal tract diseases. The rest of possible application in folk and traditional medicine were related to Neurological, Respiratory, Urological, Cardiovascular and Psychological disorders categories.

Concerning anti-inflammatory pharmacological group, two medicinal plants described in Green Pharmacy rubric were included in the Pharmacopoeia but have not been addressed in Shikov's research: *Calendula officinalis* L. and *Matricaria chamomilla* L. According to the newspaper's

rubric their flowers are applied for wide spectrum of diseases. For instance, *Calendula officinalis* has been mentioned as a traditional remedy for various problems with skin (cuts, burns, furunculosis, septic wounds), for Digestive diseases category (gums bleeding, children thrush, gastritis, colitis, peptic and duodenal ulcer, liver and gallbladder disease). It is also applied for treating acute tonsillitis (Respiratory disease category) and cervical erosion (Female Genital).

Matricaria chamomilla L. has effects in common with *Calendula officinalis* L. The infusion of chamomile inflorescence has anti- inflammatory effect as it is stated in newspaper's announcement. The pharmacist has advised to use it internally for the intestines and gastric spasms, for inflammation of the gallbladder and liver, for flux and toothache of various nature. Externally it is recommended to apply for baths in joint lesions and rheumatism,the decoction is used for festering wounds, boils, furuncles, ulcer skin. Besides, decoctions and lotions prepared of this medicinal plant are famous to provide softness for skin and to prevent hair loss.

Herba chelidonii (*Chelidonium majus* L.) is indicated in the 11th edition of Pharmacopoeia of the USSR as 'Anti-inflammatory for external use'. In the newspaper, the vast spectrum of suggestion instances has been reported together with the procurement instructions (as in the majority of this rubric announcements) referring to this medicinal plant. The pharmacist has explained that herba chelidonii is used a lot for Skin category of diseases, for example, to reduce warts, freckles, ulcer skin, to treat calluses and wounds. Juice and tincture of the plant is applied for curing polyps, medicine made from fresh herba is effective for eczema. What is more, it is claimed that plant inhibits the growth of malignant tumors, especially external on the skin. It is important to mention that there was internal application of the plant recorded in the announcement.

For instance, the pharmacist advised to use it for rheumatism, hypertension, dysentery. In homeopathy *Chelidonium majus* is applied as an indispensable remedy for liver and bile ducts diseases. Such diseases as gout, epilepsy and lupus were mentioned in the rubric and have been categorized in the database in the following way: Endocrine, Neurological and General.

One more plant that was included in the Pharmacopoeia and in Green Pharmacy rubric is *Hypericum perforatum* L. A typical plant of the Pechory region, it has been reported by one local pharmacist in 1986 with a specific name as a "cure for 99 diseases" that grabbed my attention.

Indeed, the range of its use, according to the local pharmacists, covers various diseases categories reported in the database. This name is a quite common one for some plants used in different ethnobotanical sources. What is more, studying materials of medicinal plants, I found out that the identic folklore name has been mentioned in the book of Grinkevich N.I. and Sorokina A.A. published in 1988. 'As it is impossible to bake bread without flour, so it is impossible to treat many diseases without St. John's wort', folk healers said. Regarding the rubric, in 1989 one more announcement written by another pharmacist of the same drugstore has been published about this medicinal plant.

According to the rubric material there were the following diseases categories where *Hypericum perforatum* could be applied as a treatment: Cardiovascular, Digestive, Endocrine, General, Musculoskeletal, Neurological, Respiratory, Skin and Urological. Almost for each category several suggestion instances have been addressed. Cardiovascular group of diseases included hemorrhoids and so-called 'heart disease'. There was diverse application in Digestive category: to prevent bad breath and to strengthen the gums, the use for peptic ulcer, liver and gastrointestinal tract disorders. Gout was indicated in Endocrine group, rheumatism was mentioned in Musculoskeletal one, inflammatory processes and pulmonary tuberculosis were registered in General disease category. Neurological diseases were reported by few suggestion instances such as: sciatica and headache. Respiratory category included tonsillitis acute and influenza, in Urological only bladder disease was named. The biggest part of suggestion instances was related to Skin category: boils, wounds, burns, bedsores, ulcer skin, oily face seborrhea and acne.

Fruit of *Juniperus communis* L. and aerial parts (herba) of *Equisetum arvense* L. were registered in Diuretic pharmacological group of the State Pharmacopoeia. In GP rubric the usage of *Equisetum arvense* was described 'in the form of decoctions and liquid extracts' without particular suggestion instances to apply. Instead, the pharmacist has given a description of its procurement period and drying methods. Talking about *Juniperus communis*, it is significant to mention that its description and possible application in the folk medicine were written referring to different specialists' opinion in this field. The author has mentioned such a notable work as Avicenna's 'The Canon of Medicine' where *Juniperus communis* was characterized as diuretic as it was registered in the Pharmacopoeia. Furthermore, Russian professor S. Kutorga in his book published in 1847 has described in detail different healing effects of this plant. N. Kovaleva, the herbalist who has written 'Lechenie Rastenijami' (1972), was named in the rubric's announcement as well. Her book was recognized as one of the best in the USSR in the field of herbal medicine. She has also noticed the diuretic effect of tea made of Fructus Juniperi.

Tilia cordata Mill., medicinal plant of Diaphoretic (sudorific) pharmacological group of the State Pharmacopoeia, has been reported in 'Pechorskaia Pravda' with a spectrum of suggestion instances. They were divided into the following categories for oral administration or topical application: Respiratory as the largest one (cough, cold, influenza, bronchitis and tonsillitis acute), Digestive (peptic ulcer), Musculoskeletal (rheumatism), Endocrine (gout), Urological (kidney disease) and Skin (burns).

Urtica dioica L. has been reported in both sources with its haemostatic effect. As it was referred to both Pharmacopoeias (European and Soviet), Shikov has not provided a detailed description of the plant application. On the contrary, it was done by the pharmacist in the announcement of newspaper's rubric. This plant was mentioned as a folk healer for hemorrhage of diverse nature: uterus, haemorrhoids and kidney. In ICPC-2 they have referred to Female Genitale, Digestive and Urological diseases categories. There were several suggestion instances of the plant application categorized in Skin and Blood groups: wounds, chronic ulcer, both registered as Skin group and ananemia as Blood one. What is more, *Urtica dioica* leaves were used in the laxative tea as it was claimed by the local pharmacist.

Alnus Mill. (represented by two accepted taxa - *Alnus incana* (L.) Moench and *A. glutinosa* (L.) Gaertn.) has been included in Astringent pharmacological Group. Its possible suggestion instances described in the newspaper's announcement were related to Digestive category where its astringent effect was mentioned. For instance, it was named as stomach and chronic intestinal disease astringent. Additionally, *Alnus* female catkins have been suggested as colonic catarrh remedy and dysentery treatment.

Cardiovascular pharmacological group and diseases category include *Crataegus* spp. that was named in both: the Pharmacopoeia and rubric of the newspaper. However, Shikov claimed that indications as well as pharmacological profile of this plant were similar in Russia (the USSR in 1976-1990) and Europe. Therefore, it has not been discussed in his research. As for Green Pharmacy rubric, various suggestion instances of *Crataegus* have been described in September announcement 1989. The Pechory pharmacist has discussed the application of the decoction and other types of medicine made of Crataegi Flores and Fructus. It is important to add that there was one possible application registered in Psychological category of diseases: menopausal neurosis. Nevertheless, the majority of suggestion instances such as hypertension, angioneurosis, atrial fibrillation, paroxysmal tachycardia and general atherosclerosis have been classified as Cardiovascular group stated in the Pharmacopoeia.

Taraxacum sect. Taraxacum F.H.Wigg. was included in the State Pharmacopoeia of the USSR as appetite stimulant and choleretic agent. In the newspaper's rubric some other effects were discussed. For instance, the powder prepared of the roots was reported as an effective treatment for atherosclerosis. The local pharmacist has also highlighted antipyretic, diaphoretic and tonic effects that could provide not only roots but diverse parts of the plant.

Vaccinium vitis-idaea L. and *Betula pubescens* Ehrh. from the State Pharmacopoeia have been described in the article published by Shikov and 'Pechorskaia Pravda'. In the newspaper both plants were characterized as folk remedies applied for a vast spectrum of diseases. Leaves and fruit of *Vaccinium vitis-idaea* were named as a treatment for chronic constipation, diarrhea, flatulence, gastric catarrh and gastritis. All the diseases mentioned above were classified as Digestive category (ICPC – 2).

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This medicinal plant was also addressed to cure bladder and kidney diseases (Urological category) as well as gout (Endocrine category). According to the Pharmacopoeia, infusions or decoctions made from lingonberry leaves have been used as an astringent and diuretic for the kidney stones leaching, in cases of diarrhea, stomach pain and rheumatism in Russian traditional medicine. *Vaccinium vitis-idaea* leaves was recommended in modern Russian medicine prepared as decoction to use as a cholagogue, a diuretic, an antiseptic as well as an astringent for the treatment of kidney and bladder diseases, diarrhea, gastroenteritis. Shikov has reported the plant application for rheumatism, gout, arthritis and addressed the detailed discussion about the lack of literature data available regarding the toxic effects of the plant.

Betula pubescens Ehrh. was described as one of the symbol of Russian nature. In Green Pharmacy rubric a large spectrum of suggestion instances and diseases categories have been mentioned relating to this special tree. Indeed, its buds, leaves and juice have been discussed in the announcement as a cure for the three biggest categories such as Digestive, Respiratory and Skin diseases. Digestive group has included flatulence, colitis, increased acidity of gastric juice, peptic ulcer, gastritis and gastric cancer. In Respiratory category the following suggestion instances have been named: laryngitis, bronchitis, tracheitis, tonsillitis acute, pulmonary disease. Moreover, expectorant effect and the remedy to apply for lung cancer were registered in the announcement. The third group is represented by Skin diseases with the following application: for hair growth strengthening and stimulation, skin irritation with purulent secretions, in cases of acute and chronic eczema, furunculosis, wounds, ulcers, diathesis and etc. As it was stated in the announcement, buds and leaves are usually prepared in the form of infusions and decoctions.

According to Shikov (2014), buds of the birch tree have been used for centuries. In adequate doses, there were no toxic effect or contraindications registered except for ingestion, due to the presence of ether oils. It was noticed that birch buds were widely used in Russian traditional medicine. Mainly, they were applied as a diuretic, diaphoretic, expectorant, cholagogue, blood-purifier, analgesic and anti-infective agents, being antiseptic for wound healing. Cases of furunculosis and for removing skin spots were listed as well. What is more, special cases of buds' usage in patients with edema of cardiac origin as a diuretic were reported by Shikov as well.

Sorbus aucuparia L. was mentioned as Polyvitamins agent in the Pharmacopoeia. The edible part of this plant were fruits that have been traditionally used in our country for their diuretic, anti-inflammatory, anti-diarrheal, vasorelaxant and vasoprotective properties and as a vitamin source. Shikov claimed that S. aucuparia fruits have been used in Austria as syrups, jellies, teas or liqueurs to treat respiratory tract-related diseases, such as infections, colds, fever and influenza as well as rheumatism and gout. He has mentioned fruits application to cure gastrointestinal tract as antiflatulent and antibloating agents and against colics in Switzerland.

The pharmacist in rubric has referred to the same diseases named by Shikov, adding some more suggestion instances that have not been mentioned in the article: the increase of the body's resistance to hypoxia (i.e. oxygen starvation) and the improvement of the overall body condition.

All in all, the conclusion made by Shikov about S. aucuparia fruits has included one crucial statement: he claimed that the pharmacological effects of this fruit have not still well documented and warranted further study.

6. Conclusion

The main goal of this study was to analyze information provided by the newspaper about plants to the locals. The Green Pharmacy and the Procurement Office rubrics were studied in details to make a database of the medicinal plants and their possible application. The Green Pharmacy rubric was written mainly by the pharmacists and included medicinal plants description and suggestion instances of their application in folk medicine. The Procurement Office rubric showed the economic aspect of the human-plant relationship. It included the names of the plants that the office procured, with prices and the description of the goods that locals could buy or could receive as a prize in exchange.

Two editions (10th and 11th) of the State Pharmacopoeia of the USSR were chosen for comparison, because they covered the period of the research – 1976 to 1990 (the 10th edition was issued in 1968, the 11th – in 1987 (part 1) and 1990 (part 2)). Of the 34 of medicinal plants reported in the newspaper's Green Pharmacy rubric, 22 taxa were named in the 11th edition.

According to the list of medicinal plants included in both pharmacopoeias and the newspaper's material, a comparative analysis of diseases categories was done. The most frequently mentioned diseases categories were Digestive and Skin. Plants that have been suggested as a cure for the largest number of diseases were Chelidonium majus L. and Hypericum perforatum L. The Procurement Office rubric gives us an opportunity to get the idea of the most valuable plants from the economic point of view – procurement of Salix sp., Vaccinium oxycoccos and Vaccinium vitis-idaea has been rewarded special premiums.

The ecological aspect has been highlighted as well by means of instructions and advices for the procurement provided in this rubric.

As for the comparison of the rubrics, it provided the following results: of the 81 unique plants reported 34 were mentioned in the Green Pharmacy, 57 – in the Procurement Office.

In addition, making reference to the research of Shikov and having in mind that a big part of scientific articles has been never translated into English in the USSR, it was clearly seen that

much information collected by scientists was not available for the international community. However, even in such a small district as Pechory, based on the analysis of two rubrics of ‘Pechorskaya Pravda’, it is quite easy to highlight the main idea of local authors. They were applying their knowledge for popularization of medicinal plants among citizens by providing in the most comprehensible way description of the plants, instructions for their accurate procurement, advices of plants' application as folk remedy with listing suggestion instances at maximum.

To sum it up, this work contributes in providing insight into popularization and dissemination of medicinal plants in the Pechorsky District by means of local newspaper’s analysis and the comparison of the extracted data with the official source of knowledge as the State Pharmacopoeia. Nevertheless, as this work was the pioneering one to use such materials for the discussion about the human-plant relationship, the further analysis as well as the detailed comparison with other materials are needed to be done in future.

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Appendix

Summary of the database that contains all taxa named in the newspaper's rubrics during the indicated period (1976-1990) with their related family, local name used in the source, parts of the plant, suggestion instances (when given) and years when those plants were stated in each rubric.

Taxa, Family	**Local name**	**Part of the plant**	**Suggestion instances**	**Years (GP)**	**Years (PO)**	**Years (HN)**	**Years (NA)**
Achillea millefolium L., Asteraceae	Тысячелетник (Tysiacheletnik)	Leaves, flowers, aerial parts	Facial acne		1983, 1987		1983
Acorus calamus L., Acoraceae	Аир болотный (Air bolotnyi)	Root			1987		
Alchemilla vulgaris L., Rosaceae	Манжетка обыкновенная (Manzhetka obyknovennaia)	Aerial parts	Diarrhoea, bladder inflammation, kidney inflammation, dysentery, upper respiratory tract disease, wounds, boils, skin inflammation	1989			
Allium cepa L., Amaryllidaceae	Лук репчатый (Luk repchatyi)	Aerial parts, bulbs	Anthelmintic, increases appetite, improves the secretion of digestive juices, hypertension, avitaminosis, dystrophy, headache, cough, bronchitis, whooping cough, sore throat, rhinitis, flu, upper respiratory tract catarrh, cavernous forms of lung tuberculosis, calluses, wrinkles	1990	1976, 1984, 1986, 1987, 1988, 1990		1983, 1989
Allium sativum L., Amaryllidaceae	Чеснок (Chesnok)	Bulbs	Flu, bronchial asthma, colds, whooping cough, headache, tuberculosis, rhinitis, sore throat, upper respiratory tract		1984, 1986		1989

			catarrh, inflammatory and suppurative processes in lungs, otitis				
Alnus Mill., Betulaceae	Ольха (Ol'kha)	Female catkins	Gastrointestinal diseases, diarrhea, colonic catarrh, gastric pain, dysentery, stomach disease astringent, acute and chronic intestinal disease astringent with diarrhea	1984, 1988	1982, 1983, 1984, 1985, 1987, 1988, 1989, 1990		1977
Aloe sp., Asphodelaceae, Asteraceae	Алоэ (Aloe), Столетник (Stoletnik)	Leaves	Calluses				1983
Anethum graveolens L., Apiaceae	Укроп (Ukrop)	Aerial parts			1986, 1990		
Apium graveolens L., Apiaceae	Сельдерей (Sel'derei)	Aerial parts			1986		
Arctium lappa L., Asteraceae	Лопух большой (Lopukh bol'shoi)	Leaves, root	Gout, diabetes, haemorrhoids, rheumatism, liver and kidney stones, acne, boils, herpes, rickets, diathesis, chronic constipation, helminths, stomach ulcers, gastritis, edema, colds, trophic ulcers, treatment of burns, hair growth acceleration (burdock oil), joint swelling, headache, hemorrhage (when bitten by poisonous insects and snakes), eczema, skin itching, gout, inflammatory kidney disease, cholelithiasis and urolithiasis, gastritis, colitis, rickets, hemorrhoids, rheumatism, skin diseases, baldness, dandruff, scalp itchiness, hair loss	1988, 1989			1983

Arctostaphylos uva-ursi (L.) Spreng., Ericaceae	Толокнянка (Tolokнianka)	Aerial parts			1987		
Armoracia rusticana G.Gaertn., B.Mey. & Scherb, Brassicaceae	Хрен (Khren)	Root	Gastritis with reduced acidity, rheumatism, gout, bladder stones, skin disorders, muscle pain, radiculitis, headache, used as a diuretic, used instead of mustards, middle ear otitis, angina, freckles and pigmentation, facial acne	1990			1983
Aronia melanocarpa (Michx.) Elliott, Rosaceae	Арония (Aroniia), черноплодная рябина (chernoplodnaia riabina)	Fruit	Hypertension, hemorrhage, hemorrhagic diathesis, diabetes mellitus, kidney diseases, low acidity gastritis, measles, typhus, scarlet fever, rheumatism, allergy, hepatitis, intoxication, blotchy eczema, atherosclerosis		1984, 1985, 1986, 1987, 1988, 1989	1990	
Artemisia vulgaris L., Asteraceae	Полынь (Polyn')	Aerial parts	Antipyretic, styptic effect, choleretic effect, anthelmintic effect, stimulates appetite, for digestion	1984			
Beta vulgaris L., Amaranthaceae	Свекла (Svekla)	Root	Spastic colitis, rhinitis		1990	1990	1989
Betula pubescens Ehrh., Betulaceae	Береза белая (Bereza belaia)	Buds, leaves, juice	Respiratory diseases (laryngitis, bronchitis, tracheitis), antiseptic, expectorant, acute and chronic eczema, wounds, skin erosions, bedsores, abrasions, skin irritation with purulent secretions, trophic ulcers, anthelmintic effect, anti-inflammatory properties, soft tissue injuries, nervous system disorders, soft tissue injuries, renal colic, jaundice, joint rheumatism, gout,	1982, 1986	1983, 1987, 1988		1983

			burns, sweaty feet, diathesis, wounds, ulcers, prevents the deposition of salts (especially oxalic acid salts), scurvy, swelling,furunculosis, angina, pulmonary disease, bronchiectasis, acne, skin blemishes, strengthening and stimulation of hair growth, scabies, leprosy, flatulence, colitis, increased acidity of gastric juice, heavy metals intoxication, alkaloids intoxication, food toxicocinfections (sausage intoxication, mushrooms intoxication), peptic ulcer, gastritis, malignant tumors (especially gastric and lung cancer), wounds, hair loss				
Bidens tripartita L., Asteraceae	Череда (Chereda)	Aerial parts		1986	1983, 1984, 1985, 1987, 1988, 1989		1983
Brassica oleracea L., Brassicaceae	Капуста (Kapusta)	Fruit	Cough, sore throat, gums loosening, headache, respiratory tract inflammation, pulmonary tuberculosis		1990		1989
Calendula officinalis L., Asteraceae	Календула лекарственная (Kalendula lekarstvennaia)	Flowers	Cuts, burns, furunculosis, cervical erosion, gums bleeding, thrush (children), angina, gastritis, stomach ulcer, duodenal ulcer, colitis, liver and gallbladder disease, septic wounds	1990			
Calluna vulgaris (L.) Hull, Ericaceae	Вереск (Veresk)	Aerial parts	Rheumatism, gout, kidney stones,	1989			

			bladder and urinary tract inflammation, kidney disease, colds, wounds, burns, eczema				
Capsella bursa-pastoris (L.) Medik., Brassicaceae	Пастушья сумка (Pastush'ia sumka)	Aerial parts			1984, 1987		
*Cetraria islandica***	Исландский мох (Islandskii mokh)	Aerial parts	Pulmonary tuberculosis, respiratory diseases, gastric atony, chronic constipation, diarrhea	1989			
Chelidonium majus L., Papaveraceae	Чистотел (Chistotel), Ласточкина трава (Lastochkina trava)	Aerial parts	The juice is used to reduce warts. Relieves blindness in infants. Inhibits the growth of malignant tumors, especially external on the skin, lips, etc. Warts, calluses, freckles, ulcers, used wounds. Liver disease, biliary tract disease, eczema, gout, and epilepsy. Juice and tincture of the plant is used to treat polyps, eczema and lupus. Rheumatism, hypertension and dysentery. In homeopathy is an indispensable remedy for diseases of the liver and bile ducts	1986, 1988,	1983, 1985, 1987, 1988, 1989		1983
Convallaria majalis L., Asparagaceae	Ландыш (Landysh)	Aerial parts, leaves			1983, 1984, 1985, 1987		
Crataegus L., Rosaceae	Боярышник (Boiaryshnik)	Fruit, flowers	Hypertension, angina pectoris, angioneuroses, atrial fibrillation, paroxysmal tachycardia, general atherosclerosis, menopausal neurosis	1989	1987		

Cucumis sativus L., Cucurbitaceae	Огурец (Ogurets)	Fruit	Oily skin		1983, 1986, 1987, 1988, 1990		1983
Daucus carota L., Apiaceae	Морковь (Morkov')	Fruit	Cough, upper respiratory tract catarrh, pulmonary tuberculosis (initial stage), dyspnea, dry skin		1988, 1990		1983, 1989
Equisetum arvense L., Equisetaceae	Хвощ полевой (Khvoshch polevoi)	Aerial parts	Used in the form of decoctions and liquid extracts	1990			
Fragaria vesca L., Rosaceae	Земляника (Zemlianika)	Fruit	Facial acne		1985, 1986, 1987		1983
Fragaria x ananassa (Duchesne ex Weston) Duchesne ex Rozier, Rosaceae	Клубника (Klubnika)	Fruit			1983, 1984, 1986, 1987, 1988		
Frangula alnus Mill., Rhamnaceae	Крушина (Krushina)	Bark			1983, 1984, 1985, 1987		1983
Geum rivale L., Rosaceae	Гравилат речной (Gravilat rechnoi)	Root	Calluses	1983			1983
Glycyrrhiza glabra L., Fabaceae	Корень солодки (Koren' solodki)	Root		1985			1985
Helichrysum arenarium (L.) Moench, Asteraceae	Бессмертник (Bessmertnik)	Flowers	Improves bile secretion, increases the tone of the gallbladder, increases the secretion of gastric juice, activates the pancreas, increases urine output. Cholecystitis, cholelithiasis and hepatitis. It improves the washout of sand and small stones 1-2 mm in diameter from the gallbladder. Gastritis with reduced acidity. It can be used as a desiccant and diuretic, without	1990	1983, 1984, 1985, 1987,		1983

			irritating the tissue organ (chronic inflammation of the kidney with fluid retention). In case of perspiration its infusion is used both in pure form and in a mixture, for example, with Alchemilla vulgaris, in the form of sprinkling				
Humulus lupulus L., Cannabaceae	Хмель обыкновенный (Khmel' obyknovennyi)	Hops	Hair loss				1983
Hypericum perforatum L., Hypericaceae	Зверобой обыкновенный (Zveroboi obyknovennyi)	Aerial parts	Rheumatism, sciatica, gout, haemorrhoids, inflammatory processes, gastrointestinal tract diseases, liver disease, cardio disease, bladder disease, wounds, ulcers, burns, bedsores, peptic ulcers, gums strengthening, bad breath, oily face seborrhea, acne, influenza, tonsillitis acute, headache, boils, pulmonary tuberculosis	1986, 1989	1983, 1985, 1987, 1988, 1989		1983
Juniperus communis L., Cupressaceae	Можжевельник (Mozhzhevel'nik)	Fruit, aerial parts	Skin tuberculosis, bones tuberculosis, joints tuberculosis	1988, 1989			
Linum usitatissimum L., Linaceae	Лен-долгунец (Len-dolgunets)	Aerial parts, seeds	Linen underwear is recommended for lung patients				1977
Lycopodium clavatum L., Lycopodiaceae	Ликопидий (Likopidii)	Spores			1983		1983
Malus domestica (Suckow) Borkh., Rosaceae	Яблоня домашняя (Iablonia domashniaia)	Fruit	Anemia, used as a healing agent for abrasions and other skin injuries, hypo- and avitaminosis, inflammatory diseases of the stomach and intestines (for	1990	1984, 1985, 1986, 1987, 1988		

			improving digestion and normalizing metabolism), as a general tonic, urolithiasis, gout, rheumatism, gastrointestinal diseases, colds, oxalate kidney stones, liver diseases, kidney diseases, cardiovascular system diseases, diabetes, obesity				
Malus sylvestris (L.) Mill., Rosaceae	Яблоня (дичок)* (Iablonia (dichok)*	Fruit			1983, 1988, 1989		
Matricaria chamomilla L., Asteraceae	Ромашка (Romashka), Ромашка аптечная (Romashka aptechnaia)	Flowers	It has disinfectant and diaphoretic effect. It relieves pains, weakens inflammatory processes, normalizes disturbed function of gastrointestinal tract, dilates cerebral vessels. Infusion of chamomile flower baskets has anti-inflammatory effect, antiseptic effect, anticonvulsant effect, sedative effect, analgesic effect, diaphoretic effect, choleretic effect. Used internally for spasms of the intestines and stomach, gastritis, inflammation of the liver and gallbladder, neurosis, seizures. Outwardly used for baths in joint lesions, as well as for gargling and washing ulcers. In folk medicine, outwardly for poultices, lotions, gargles and enemas, with boils, boils. When flux and toothache.	1988	1984, 1987		1983

			The decoction used for festering wounds, boils, prepare lotions for the eyes. Baths from the decoction - when rheumatism and gout. Decoction washed face; it gives the skin softness. Infusion - with overwork, malaise and colds, with hair loss. Rough skin on the heels				
Melissa officinalis L., Lamiaceae	Мелисса лекарственная (Melissa lekarstvennaia)	Leaves	Soothing, anticonvulsant, analgesic and cardiac remedy. For cardiac patients pains and shortness of breath disappear, pulse becomes less frequent, blood pressure decreases	1986			
Menyanthes trifoliata L., Menyanthaceae	Трифоль (Trifol')	Leaves			1983		1983
Nymphaea alba L., Nymphaeaceae	Белая водяная лилия (Belaia vodianaia liliia)	Aerial parts, flowers	Facial acne				1983
Origanum vulgare L., Lamiaceae	Душица обыкновенная (Dushitsa obyknovennaia)	Aerial parts	It has a calming effect on the central nervous system, significantly increases the secretion of sweat, digestive and laid glands in the bronchi, increases intestinal peristalsis, used in intestinal atony, to stimulate appetite and in reduced secretion of gastric juice, bronchitis and other respiratory tract illnesses, diaphoretic, antipyretic, diuretic, anthelmintic, headaches, nervous agitation, insomnia, compresses to treat	1990			

			furuncles and pustules, scrofula, toothache				
Panax ginseng C.A.Mey., Araliaceae	Женьшень (Zhen'shen')	Root					1986
Petroselinum crispum (Mill.) Fuss, Apiaceae	Петрушка (Petrushka)	Seeds	Baldness		1986		1983
Pinus sylvestris L., Pinaceae	Сосна (Sosna)	Buds	Diseases of the lungs and upper respiratory tract. Bronchitis, inflammation of the upper respiratory tract, pulmonary tuberculosis. Turpentine - antimicrobial agent, local irritant in rheumatism, gout, neuralgia, inhalation in upper respiratory tract disease. Decoction and tincture - for tuberculosis and rash.	1984, 1988, 1989	1987, 1989, 1990		1989
Plantago major L., Plantaginaceae	Подорожник (Podorozhnik)	Leaves	Bee stings, wasp stings, bumblebee stings		1983, 1984, 1985, 1987, 1988, 1989		1979, 1983
Potentilla erecta (L.) Raeusch., Rosaceae	Калган (Kalgan), Лапчатка (Lapchatka), Лапчатка прямостоячая (Lapchatka priamostoiachaia), Дубровка (Dubrovka)	Root	Antidiarrheal, inflammatory diseases of gastrointestinal tract, dysentery, internal bleeding (gastric, intestinal, uterine, etc.), sore throat, inflammation of gums and oral mucous membranes, wounds, ulcers, burns, wet eczema and some other skin diseases. Dysentery, gastritis, stomach ulcer, liver diseases, styptic effect, diarrhea, gastrointestinal diseases, gout, wounds, burns, frostbite, skin	1989, 1990	1984, 1987		

			diseases				
Prunus L., Rosaceae	Слива белая (Sliva belaia) Слива синяя (Sliva siniaia)	Fruit			1984, 1986, 1987, 1988, 1989		
Prunus padus L., Rosaceae	Черемуха (Cheremukha)	Fruit	Stomach and intestinal disorders, infectious colitis, dysentery, eczema, intertrigo, mycosis	1989			
Prunus cerasus L., Rosaceae	Вишня (Vishnia)	Fruit			1984		
Pteridium aquilinum (L.) Kuhn, Dennstaedtiaceae	Папоротник-орляк (Paporotnik-orliak)	Aerial parts			1986, 1987, 1990		
Raphanus L., Brassicaceae	Редька (Red'ka)	Fruit			1990		
Rhododendron tomentosum Harmaja, Ericaceae	Багульник (Bagul'nik), Багульник болотный (Bagul'nik bolotnyi)	Aerial parts	Diaphoretic effect, expectorant effect, analgesic effect, bactericidal effect, wound healing effect, reduces blood pressure. Rhinitis, catarrh of upper respiratory tract	1986, 1988	1983, 1984, 1985, 1987, 1988	1988	
Ribes nigrum L., Grossulariaceae	Смородина черная (Smorodina chernaia)	Fruit, leaves			1983, 1984, 1986, 1987, 1988, 1989, 1990		
Ribes rubrum L., Grossulariaceae	Смородина красная (Smorodina krasnaia)	Fruit			1983, 1984, 1986, 1987, 1988, 1989, 1990		
Ribes uva-crispa L., Grossulariaceae	Крыжовник (Kryzhovnik)	Fruit			1983, 1984, 1986, 1987, 1988, 1989, 1990		

Rosa L., Rosaceae	Шиповник (Shipovnik)	Fruit			1987		
Rubus idaeus L., Rosaceae	Малина (Malina), малина лесная (malina lesnaia)	Fruit, flowers, leaves	Facial acne, colds		1986, 1987		1983, 1989
Salix L., Salicaceae	Ива (Iva)	Bark	Dandruff,scalp itchiness, hair loss		1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989		1983
Salvia officinalis L., Lamiaceae	Шалфей (Shalfei)	Leaves	Undereye swelling				1983
Sambucus racemosa L., Viburnaceae	Бузина красная (Buzina krasnaia)	Fruit	Oil-impregnated skin				1983
Secale cereale L., Poaceae	Рожь (Rozh')	Aerial parts, root	Baldness				1983
Solanum lycopersicum L., Solanaceae	Помидор (Pomidor)	Fruit	Anemia, cardiovascular diseases (especially cardiac arrhythmia), wounds, trophic ulcers, circulatory insufficiency	1983			
Solanum tuberosum L., Solanaceae	Картофель (Kartofel')	Tubers	Respiratory disease		1976, 1977, 1982, 1984, 1985, 1986, 1987, 1988, 1989, 1990		1989
Sorbus aucuparia L., Rosaceae	Рябина обыкновенная (Riabina obyknovennaia)	Fruit	Hypoacid gastritis, scurvy, avitominosis, rheumatism, bladder disease, biliary tract disease, intestinal disease, increases the body's resistance to hypoxia (i.e., oxygen starvation), atherosclerosis, improves the overall body condition	1990	1983, 1984, 1985, 1986, 1987, 1988, 1989		1983

Tanacetum vulgare L., Asteraceae	Пижма (Pizhma)	Flowers			1984, 1987, 1988, 1989		
Taraxacum sect. Taraxacum F.H.Wigg., Asteraceae	Одуванчик (Oduvanchik)	Root	Atherosclerosis, used as antipyretic, diaphoretic and tonic effect, bee stings, wasp stings, bumblebee stings	1986	1987		1983
Thymus serpyllum L., Lamiaceae	Чабрец (Chabrets), Богородская трава (Bogorodskaia trava)	Aerial parts	Stomach function disorder, flatulence, kidney disease, cold, neuralgia, abdominal cramps, hypertension, atherosclerosis, gastrointestinal tract diseases, insomnia	1989			
Tilia cordata Mill., Malvaceae	Липа (Lipa) Липа сердцевидная (Lipa serdtsevidnaia)	Flowers	colds diaphoretic, angina, cough, influenza, bronchitis, peptic ulcer, rheumatism, gout, burns, kidney disease	1989	1987		1989
Tussilago farfara L., Asteraceae	Мать-и-мачеха (Mat'-i-machekha)	Flower, leaves	Breast diseases, stomach catarrh, intestinal catarrh, kidney diseases, bladder catarrh, dandruff, scalp itchiness, hair loss	1986	1984, 1985, 1987, 1988, 1989		1978, 1983, 1990
Urtica dioica L., Urticaceae	Крапива (Krapiva), Крапива двудомная (Krapiva dvudomnaia)	Leaves	Rheumatism, joint stiffness, pulmonary hemorrhage, intestinal hemorrhage, used to strengthen hair, Uterus hemorrhage, hemorrhoids hemorrhage, kidney hemorrhage, wounds, chronic ulcers, anemia, laxative tea, dandruff, scalp itchiness, hair loss	1989, 1990	1987, 1989		1977, 1983
Vaccinium myrtillus L., Ericaceae	Черника (Chernika)	Fruit		1986	1983, 1984, 1985, 1986, 1987, 1988, 1989,		1983

					1990		
Vaccinium oxycoccos L., Ericaceae	Клюква (Kliukva)	Fruit			1983, 1984, 1985, 1986, 1987, 1990		
Vaccinium uliginosum L., Ericaceae	Голубика (Golubika)	Fruit			1986, 1987		
Vaccinium vitis-idaea L., Ericaceae	Брусника (Brusnika)	Leaves, fruit	Kidney disease, bladder disease, gastritis, flatulence, gastric catarrh, gout, diarrhoea, chronic constipation	1988, 1989	1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990		
Valeriana officinalis L., Caprifoliaceae	Валериана (Valeriana)	Root			1987		
Viburnum opulus L., Viburnaceae	Калина (Kalina)	Fruit	Cough, bronchitis, pneumonia, angina, wobbly teeth, facial acne		1988		1983, 1989

* *Malus sylvestris* (or *Malus domestica* in case of abandonment/self-seeding/hybrid