

A New Dictionary of Botanical Terms: Data Analysis of a Lexicographic Survey

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The word dictionary is very significant, especially in countries with old traditions of using dictionaries in education, literature and other fields, as well as in the process of personal growth and development. For a majority, dictionaries are authoritative and concentrated information sources (Baldunčiks, 2012a, p. 7). As almost half a century has passed since the first publication of P. Galenieks's *Botanical Dictionary* (Botaniskā vārdnīca) in 1950, it is necessary to develop a new dictionary of botanical terms, where Latvian would be one of the languages involved, as lately new dictionaries of this type have not been published. There is no doubt it is necessary to develop such a dictionary, and several studies have been carried out to acknowledge this fact (e.g., Balode, 2012, pp. 16-61; Helviga & Peina, 2016, pp. 127-158; Sviķe, 2015, pp. 131-140; 2016). The analysis of the lexicographic survey described in this article is a justification thereof. A dictionary of botanical terms would be a great aid not only in the work of professional translators; it would be useful to anyone who encounters terms of this field in daily work and translates such terms, for example, translators, teachers of specialised subjects (natural sciences, geography, botany), gardeners, florists, or nature enthusiasts. The study examines the results of a survey of the potential users of the dictionary.

Keywords: botany, terminology, dictionary

Introduction

In order to clarify what types of dictionaries are most commonly used nowadays, how users assess dictionaries, and how users would like the new dictionary of botanical terms to be, a survey was carried out in August and September, 2017 on the use of dictionaries, on the description thereof, and on the shape of a new dictionary of botanical terms. The aim of the study is to describe the answers to the questions of the survey and to perform survey data analysis. The following groups of potential users of the dictionary were engaged in the survey in order to clarify their needs:

- (1) Pupils and students (of translation and natural sciences),
- (2) Teachers and lecturers (teachers of specialised subjects in schools of general education and lecturers in translation and natural science studies),
- (3) Translators,
- (4) Experts, whose work is closely related to the use of botanical terms, and

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(5) Other respondents who wished to express their opinion on the form of a modern dictionary of botanical terms.

To analyse the survey data, the author has applied statistical, descriptive, and content analysis methods and approaches. The article describes the duration of the survey, the environment in which the survey was carried out, and the answers of the respondents. Based on the survey data analysis, the author of the article summarizes conclusions on the needs of the potential users of the dictionary. The conclusions would be considered as useful proposals for developing the work pattern and lexicographical concept of a new dictionary of terms.

Distribution of Survey Forms, Duration of the Survey, and Acquisition of Survey Data

Survey forms were distributed and the data were collected using Google forms; whereas the invitation to participate in the survey and the link to the form was sent electronically to the students and lecturers of the Translation Studies Faculty of Ventspils University College, pupils and teachers of general education schools of Ventspils, to the teaching staff and students of Latvia University of Agriculture and Bulduri Gardening School. The invitation to participate in the survey was also published on the author's timelines on social networks Facebook and *draugiem.lv*, as well as on the Facebook pages of the Latvian Association of Translators and Interpreters and the Latvian Florist Union, with the opportunity to share the message with friends.

The duration of the survey was less than two months—starting from mid-August until the end of September, 2017. The survey collected answers of 114 respondents. The survey form consisted of three general questions indicated and characterised further in the text. The author of the article also analyses the respondent answers to survey questions.

Respondent Answers to the First Survey Question

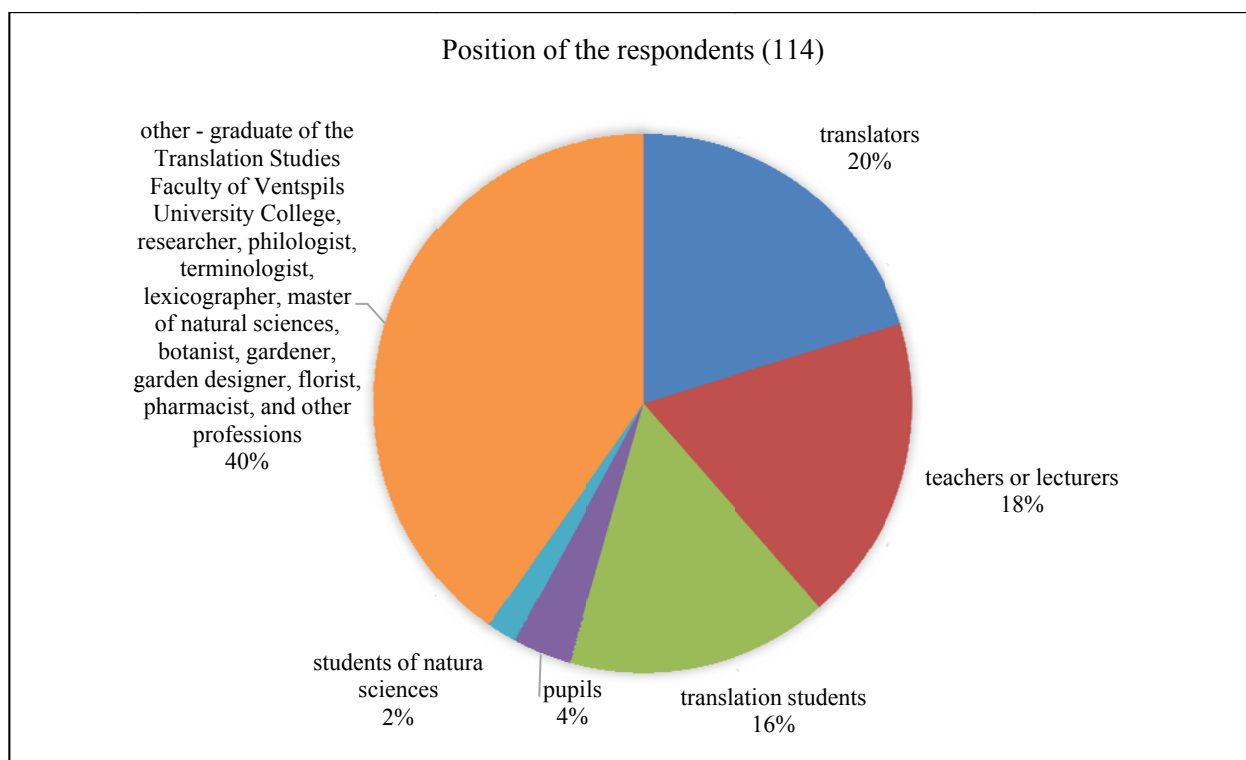


Figure 1. Position of the respondents.

The first survey question. Please indicate your job or position! All respondents have indicated their positions (see Figure 1); furthermore, 59.7% of the respondents indicate their position according to the already given variants: pupil, translation student, student of natural sciences, teacher or lecturer, translator. There are 20.2% of the respondents are translators, 18% are teachers or lecturers, 16% are translation students, 4% are pupils, 2% are students of natural sciences. In its turn, 40% of the respondents indicate their position to be “other”, where the answers included: graduate of the Translation Studies Faculty of Ventspils University College, researcher, philologist, terminologist, lexicographer, master of natural sciences, botanist, gardener, garden designer, florist, agronomist, pharmacist, and other professions.

The other two survey questions were of a general character, and the answers to the questions are summarized in the following text.

Respondent Answers to the Second Survey Question

The second survey question. Please indicate and briefly characterise the bilingual dictionaries (including terminology dictionaries) you most frequently use for studies or work (languages, volume, advantages and disadvantages; mention three examples of the dictionaries you use most often)! All 114 respondents (100%) have replied to this question. However, the answers do not include descriptions of some of the aspects of the question given in the brackets, since the question is not a multiple choice question. Nine respondents have not indicated specific dictionaries or dictionary types, or they have provided answers that were too general, e.g. “I use various electronic translation dictionaries”, “I use various translation dictionaries” etc., without providing any further description of the dictionaries. The respondents mainly state that they use both electronic and printed dictionaries for their studies or work. Further in the article, the respondent answers are characterised according to the following groups: aspects attributed to electronic dictionaries, and aspects attributed to printed dictionaries.

Electronic dictionaries and other electronic resources mentioned and used by the respondents. Most respondents have indicated that they mainly use electronic dictionaries (including online dictionaries found on the Internet, as well as dictionaries in the form of a mobile application that can be downloaded to smart devices), and other Internet resources for their work or studies. In total 14 respondents have provided a general answer; however, the dictionaries characterised further in the article are online dictionaries which were mentioned most often. The database of academic terms, *AkadTerm*, was mentioned most often, i.e., in 29 answers (25%). It is a collection of terms developed and approved by the Terminology Commission of the Latvian Academy of Sciences (1,098,527 terms in six languages), with the addition of other collections of terms (<http://termini.lza.lv/term.php>). Two translation tools are taking the second place: Google translator in various language combinations (<https://translate.google.lv/>) is mentioned in the answers of 17 respondents (15%); similarly, 17 respondents mention Tilde translator (<https://translate.tilde.com/lv/>), including the mobile application and bilingual dictionaries offered by the “Tilde Office” (*Tildes Birojs*). Many respondents indicate that easy and convenient usage is one of the advantages of Google translator, simultaneously admitting that Google translator is not reliable enough and that the translation variants provided by it must be rechecked in other sources. Other 15 respondents (13%) indicate the electronic dictionaries available on the database www.letonika.lv. Electronic dictionary *Мультитран* (site: www.multitran.ru) is pointed out as the most frequently used (mentioned in the answers of 13 respondents) electronic online multilingual dictionary, as well as the dictionaries offered by the *Oxford Dictionaries* department of Oxford University Press on

www.oxforddictionaries.com (mentioned in the answers of five respondents), the multilingual dictionary on www.dict.leo.org (mentioned in the answers of five respondents), and dictionaries on the website www.dict.cc (mentioned in the answers of three respondents), which offers a wide range of languages. The website www.dict.cc also offers a translators' forum, assessed positively by the survey respondents. The user may use other services provided on this website, such as listening to the pronunciation of a word or adding a comment. Five respondents mention the EU terminology database IATE (Inter-Active terminology for Europa) as one of the dictionaries they use most frequently. Other dictionaries belonging to the group of electronic bilingual or multilingual dictionaries mentioned in some of the answers include such dictionaries that are incorporated and collected on the following websites: www.thefreedictionary.com, www.gramota.ru, Cambridge bilingual dictionaries (www.dictionary.cambridge.org), www.slovník.seznam.cz, www.dictionary.site.lv (English-Latvian-English dictionary).

A separate group consists of translation tools based on text corpora with parallel texts in various languages: e.g., *Linguee* (available both online and via a mobile application)—www.linguee.com, which is mentioned in the answers of eight respondents, and the new-generation translation memory technology *MyMemory* (website: www.mymemory.translated.net), which is mentioned as one of such tools in three answers. This tool also provides various additional services to the user: adding one's own translation examples, deleting of the translation variants offered, assessment of reliability etc.

Respondents have indicated that they use various Internet websites with multilingual dictionaries. The Internet encyclopaedia "Nature of Latvia" (*Latvijas daba*) (website: www.latvijasdaba.lv) is mentioned as one of such websites, and it also incorporates botanical terms—plant names. This website is one of the most voluminous free-access data repositories on the Internet on the species of mushrooms, plants, and animals found in Latvia, also providing pictures or photographs of the collected species' names. Three respondents have mentioned this source. Two respondents have indicated that for work or studies they often use the free encyclopaedia Wikipedia on the website www.wikipedia.org. The articles collected in this encyclopaedia are available in various languages.

Even though the second question of the survey requires mentioning the most often used dictionaries for studies or work, some respondents also have indicated monolingual (explanatory) electronic dictionaries. Those include: the popular consolidated Latvian language dictionary on the Internet—www.tezaurs.lv (indicated in nine or 8% answers). More than 290 sources have been used in the creation of this dictionary. German explanatory dictionary www.duden.de has also been indicated in some of the answers (by four or 4% of the respondents). This dictionary has been complemented by the English-German bilingual dictionary, and it can also be used for translating into the languages. Three more answers indicate that the respondents use English or Russian explanatory dictionaries, without mentioning the titles and without describing the dictionaries in detail.

One respondent indicates that the sources they most often use for work and studies are collected on the digital lexis system www.dwds.de (dictionaries, text corpora, and statistical information) developed by the Berlin-Brandenburg Academy of Sciences (*Berlin-Brandenburgische Akademie der Wissenschaften*).

Besides the electronic dictionaries characterised above, respondents have also indicated other sources of a terminological character which cannot be grouped as dictionaries, but which are, however, used for work or studies when working with specialised texts. The respondents have indicated various Internet websites, such as the extensive Internet source, www.helpmefind.com, for gardeners with mainly descriptions about the species

of roses, peonies, and clematises in the English language. They also indicate another website in the English language favored by gardeners, www.davesgarden.com, as well as various Internet websites of botanical gardens, such as the website of the Missouri Botanical Garden, www.missouribotanicalgarden.org, which is also in English; the website of the Royal Horticultural Society, www.rhs.org.uk, which provides extensive informative materials for horticulturists in the English language; a collection of Northern Europe's fauna on the Internet website www.floranordica.org, which provides information both in English and in Swedish; the Internet-encyclopaedia in Russian, www.rosebook.ru; the Internet encyclopaedia of decorative garden plants in Russian www.flower.onego.ru; the Internet website of the Moscow seed trading company *Агбина*, www.agbina.ru. Two respondents indicate that they only use various sources in foreign languages for their work, as there is a lack of serious sources in the Latvian language, especially on such topics as ecology, biodiversity, and environmental protection. These respondents also emphasise that the stated sources in foreign languages provide them with the necessary information, as they have learned foreign languages and Latin names of plants during their studies, and they have no obstacles in understanding the information, and it is clear which species are discussed in the texts and other informative materials. One respondent (respondent's profession—agronomist) states that they do not use bilingual dictionaries in their work at all and that they only use other specialised sources of a terminological character, without specifying the sources any further.

Two respondents mention the specialised electronic (online) dictionary *Black's Law Dictionary Free Online Legal Dictionary*, available on the website www.thelawdictionary.org, a dictionary of legal terms in English and in Spanish; however, this dictionary is less related to the study.

The question section dedicated to indicating the languages of the most frequently used dictionaries, some of the answers were general, such as “I translate in various language combinations into the following languages [...]”, or “I use bilingual dictionaries [...]” without indicating specific dictionaries, therefore the author of the article only summarizes the data about the languages that were indicated in the answers. Generally, the respondents have not indicated particular language pairs or combinations, but they have indicated the languages they translate into: English—63 (55%), Russian—34 (30%), German—28 (25%), Spanish—five, Lithuanian—four, French—four, Italian—three, Czech—three, Latin—two respondents. Some respondents indicate Estonian, Polish, Swedish, Norwegian, Finnish, and Dutch to be their working languages. The data indicate that the largest contact languages the respondents work with are English, Russian, and German.

Printed dictionaries and other printed resources used by the respondents. The following section of the article focuses on summarizing the answers, respondents have given in relation to the printed or the so called “paper dictionaries” they use (if the respondents have given such information). In total, 13 respondents (11%) indicate that they only use printed dictionaries (or the so called “paper dictionaries”). The printed dictionaries indicated in the answers can be classified in the following groups: monolingual explanatory dictionaries, bilingual and multilingual dictionaries.

Four respondents indicate that they often use monolingual explanatory dictionaries published by foreign publishing houses, such as the explanatory dictionaries *Duden* and *Wahrig*, which are published in German; however, the respondents have not indicated the publication number or year. Two respondents mention that they use K. Mīlenbahs and J. Endzelīns's *Latvian Language Dictionary (Latviešu valodas vārdnīca)* (1923-1932), which indicates that this dictionary incorporates all the necessary and topical information that the newest dictionaries do not provide.

One respondent has given the following answer: “I use the old soviet bilingual paper dictionaries”, without describing the dictionaries in detail. Some respondents, similarly as in the description of the most frequently used electronic dictionaries, have also provided general information on the printed dictionaries, for example: “I use various printed general bilingual dictionaries in English, German, Russian, Spanish, French, Polish, Italian, and Latin”. On the other hand, other respondents have indicated specific bilingual dictionaries that they use most frequently. Many respondents have indicated the bilingual dictionaries published by “Avots”: the “Russian-Latvian Dictionary: around 40,000 words” published in 1997 (*Krievu-latviešu vārdnīca: ap 40 000 vārdu/Русско-латышский словарь: около 40,000 слов*), compiled by A. Darbiņa, A. Gūtmanis, O. Loginova and others; the “Latvian-German Dictionary: around 50,000 words) published in 2001 (*Latviešu-vācu vārdnīca: ap 50 000 vārdu/Lettisch-Deutsches Wörterbuch: etwa 50,000 Stichwörter*), compiled by D. Burve, I. Kļaviņa, I. Saliņa and others; the “German-Latvian Dictionary: around 75,000 words” published in 2004 (*Vācu-latviešu vārdnīca: ap 75,000 vārdu / Deutsch-Lettisches Wörterbuch*), compiled by I. Andersone and L. Vjaterē.

As the questions of the survey were formulated freely and indicating the volume of the dictionary was optional, only some respondents have specified the volume of the printed dictionaries they use. The dictionaries are theoretically divided into three groups: large, medium, and small dictionaries. The group of small dictionaries is further divided into pocket format dictionaries and miniature dictionaries (Roze, 1982, p. 94). The volume of a dictionary is one of the parameters that one cannot precisely define the numerical data of, as it is impossible to define a precise word count in a specific language, since new words come into a language every day (Zgusta, 1971, pp. 216-217). Usually the basis for the classification is the number of entries in a dictionary or the number of author’s sheets in a dictionary. According to the number of entries in a dictionary, dictionaries containing more than 80,000 entries are deemed to be large dictionaries; dictionaries with 20,000 to 80,000 entries are deemed to be medium dictionaries; but dictionaries with down to 20,000 entries are deemed to be small dictionaries. However, classification of dictionaries according to the volume varies in different countries. It depends on the lexicographical traditions of each country (Roze 1982, pp. 94-95). Even though other ways of classifying dictionaries according to their volume can be applied in metalexicographical discussions (see Schmidt, 1985, p. 98), this study applies the dictionary classification offered by L. Roze. The bilingual dictionaries indicated by the respondents are of a small volume, i.e., up to 20,000 words, as well as of a medium size—up to 80,000 entries, and of a large volume—containing up to 175,000 entries. After analysing the provided answers, it was impossible to obtain detailed information (including statistical data) on the use of the dictionaries by grouping them according to the volume.

Only some respondents mention specific specialised bilingual or multilingual printed dictionaries that they use for studies or work. However, the answers provided to the question are general and sometimes imprecise, such as: “I use German-Russian, Russian-Latvian, and English-Latvian dictionaries of biological terms”, “I use the botanical dictionary *Ботанический словарь*, published in five languages in 1960”, without providing precise information about the author of the dictionary or any other bibliographical information. Three respondents indicate that they use P. Galeniek’s *Botanical dictionary (Botaniskā vārdnīca)* published in 1950; two respondents indicate that they use the *German-Latvian Dictionary of Construction Terms* (around 18,000 terms) published in 2004 in Jelgava by the Latvia University of Agriculture (*Vācu-latviešu būvniecības terminu vārdnīca (apmēram 18,000 terminu)/Deutsch-Lettisches Wörterbuch für Bauwesen (etwa 18,000 Fachbegriffe)*), compiled by L. Ozola and R. Sipoviča. It should be emphasised that both of the abovementioned dictionaries are not incorporated in the *AkadTerm* database of academic terms, therefore the material collected in the

dictionaries is not available electronically, which explains the use of the printed dictionaries. One respondent indicates that they use J. Dolacis's multilingual (Latvian, English, German, French, Russian, and Latin) specialised *Dictionary of Forestry Equipment, Forestry and Wood Industry Terms (Mežtehnikas, mežsaimniecības un kokrūkniecības terminu vārdnīca)*, published in 1998. Even though this dictionary is incorporated in the *AkadTerm* database of academic terms, the respondent positively assesses the offered languages, term indices, and measurement tables incorporated in the dictionary, and indicates that they use the printed variant they find user-friendly enough. The author of the article notes that the incorporated entries from J. Dolacis's dictionary found on the *AkadTerm* database do not contain the grammatical references from the printed dictionary.

Respondents also indicate that they use other printed bilingual specialised dictionaries if necessary, such as dictionaries of legal, accounting, financial, and banking terms, which do not directly relate to the topic of this study, which is the use of dictionaries of botanical terms and other sources of a terminological character. Two respondents state that they often use the *Illustrated Dictionary of Foreign Words (Ilustrētā svešvārdu vārdnīca)* compiled by I. Andersone and published in "Avots", emphasising that the illustrations were useful in understanding the words.

Some of the respondents provide general answers, such as: "I use various popular science and scientific publications", without describing the sources in detail. Some respondents indicate other specialised literature, plant identifiers, and publications of a terminological character, such as text books for botany—an exercise book on the *Latvian Vascular Plant Flora (Latvijas vaskulāro augu flora)*, published by the Institute of Biology of the University of Latvia; A. Neilande's re-issued and updated publication *Guide to Forming Greeneries (Apstādījumu veidotāju ceļvedis)* Ģ. Gavrilova's work *The Leaf: Morphology and Terminology (Lapa: morfoloģija un terminoloģija)*, published by "Zinātne" in Riga, 1988; I. Straupe, A. Indriksons, and R. Kazāks's publication *Trees, Shrubs and Ground Vegetation in the Latvian Forest Stand (Koki, krūmi un zemsedzes augu Latvijas mežaudzē)*, published in Jelgava in 2014 by the student association "Šalkone", which is also available on the Internet: http://www.mf.llu.lv/sites/mf/files/files/articles/Kok_krumi_zemsedzes_augi_latvijas_mezaudzēs.pdf. Some respondents indicate that they use N. Priedītis's encyclopaedia *The Plants of Latvia (Latvijas augi)*, published in Riga in 2014 by SIA "Gandrs". This information indicates that the language material provided in the existing dictionaries is not sufficient for the understanding and translation of specialised texts, therefore one must also use specialised literature for studies or work.

Advantages and disadvantages of the dictionaries and other sources of a terminological character indicated by the respondents. The following section of the study covers the information the respondents have provided regarding the advantages and disadvantages of the existing dictionaries used in practice. Similar to the previous pattern of the study, the respondent answers have been grouped according to whether the dictionary in question is electronic or printed. The first part focusses on the advantages of dictionaries and publications of a terminological character, but the second part focusses on the disadvantages thereof, as indicated by the respondents.

When comparing electronic and printed sources, the majority of the respondents indicate the following advantages of electronic dictionaries and other electronic sources: quick and easy search option, they can be used at any time of the day if Internet access is assured (mentioned by 12 respondents); electronic sources are usually much more extensive and one can find most of the necessary information (mentioned by seven

respondents); electronic sources are linked to other dictionaries, databases, websites, for example, www.wikipedia.org, and it is possible to suggest or make corrections to some of them (mentioned by four respondents). A couple of respondents indicate that electronic dictionaries are easier to add information to, and they contain colourful pictures—photos and illustrations; several electronic sources offer the possibility to listen to the pronunciation of a word in question, as well as to search words based on their pronunciation.

Still, respondents indicate several advantages of the printed dictionaries in comparison to the electronic ones: there are no pop-up advertisements which are sometimes annoying, a paper dictionary is more pleasant to the perception, it is easier to use them, searching for information in printed dictionaries is not as tiring as searching for it in electronic sources, the searched words are easier to remember. However, many respondents indicate that general monolingual and bilingual dictionaries of large volumes have more advantages. On the other hand, the limited possibilities of smaller dictionaries in the translation of specialised texts are indicated as one of the greatest disadvantages. One respondent assesses very positively the printed explanatory dictionary *Oxford Advanced Learner's Dictionary* in English, as, according to the respondent, there are colourful pictures of good quality, logical and well-embedded typographical emphasis, excellent examples selected and incorporated, and the material included in the dictionary is very clear. The respondent does not provide the date and place of publishing.

The abovementioned advantages of printed dictionaries mentioned by the respondents relate to B. A. Kipfer's conclusions. B. A. Kipfer names nine reasons why printed dictionaries are better if compared with the electronic ones, e.g., words in a printed dictionary are shown in a comprehensive way, not in a separate box as it often is with electronic dictionaries; one may train their brain function when searching for a particular word in a printed dictionary where words are listed alphabetically; printed dictionaries are characterised by clearness and they are less disorganized, as there are no so called pop-up advertisements (Kipfer, 2013).

As indicated by the respondents, electronic dictionaries and other sources and dictionaries of terms have the following disadvantages: sometimes they have a complicated and unclear structure, it is difficult to use them, also electronic sources are incomplete, and the translations provided are imprecise and sometimes even wrong. One respondent strongly emphasises that the registers and lists of plant species, diseases etc. by the State Plant Protection Service found on its website (www.vaad.gov.lv) are difficult to use. Respondents also criticise the search section of the website www.latvijasdaba.lv for the encyclopaedia "Nature of Latvia" (*Latvijas daba*), indicating that from time to time the website indicates that the word cannot be found in the encyclopaedia, but after searching it for the second or third time, the word is found. Six respondents indicate that electronic dictionaries often do not provide the Latvian names for popular cultivated plants, foreign plants, indoor plants, and succulents, and their equivalents in other languages are also not provided. The respondents indicate that they prefer such electronic sources which offer various additional options, including examples, pronunciation, added phrases, grammatical references etc. The author recognizes that grammatical references are not given in some of the existing terminological dictionaries (e.g., see Galenieks, 1950; Schubert & Wagner, 2000; Zander, 2008); however, this information is necessary in practice. Four respondents indicate that the *AkadTerm* database often lacks term equivalents in German, which must then be searched for in other sources, using a third language, for example Russian. A similar comment on the lack of German equivalents is given in another answer, without mentioning the name and website of the electronic dictionary. Two respondents indicate that the disadvantage of the dictionaries on the website www.letonika.lv is the limited search possibilities, as words can only be searched in their basic forms. The dictionaries found on *IATE* and *Akadterm*

databases, as well as www.letonika.lv receive the following criticism: the entry words have poor cultural, field, and background information, there are many obsolete terms; there are not enough English equivalents of terms on *IATE*, whereas the *Letonika* website www.letonika.lv provides a large part of the information only to its subscribers for a rather high subscription fee.

The criticism of printed dictionaries overlaps with the previous comments on electronic dictionaries: even dictionaries of a large volume are incomplete, and one may not always find what they are searching for (mentioned in the answers of nine respondents), there are not enough examples, printed dictionaries lack colourful pictures, emphasis, specially marked parts of texts, they cannot be carried around due to the large volume, they are heavy and unhandy, they lack explanations of terms, as only one equivalent is provided. The respondents mention that the searched term should often be checked in various sources as one equivalent does not seem reliable, therefore, such dictionaries are unreliable. Several respondents emphasise that dictionaries containing up to 50,000 entries are not suitable for the translation of specialised texts. Several respondents indicate that it is rare that a dictionary is both bilingual and explanatory, but such dictionaries are still needed. Respondents also imply that the Latvian section or the section of Latvian equivalents of bilingual dictionaries is often incomplete. It is complicated to make quick improvements in printed dictionaries, and it requires more time to search for particular words. One respondent indicates that the lexis found in the available Spanish-Latvian dictionaries is obsolete; this comment also refers to dictionaries of other language pairs—dictionaries lack modern lexis.

The previously collected information on the answers provided to the second question of the survey allows drawing the following conclusions. The answers provided to the questions of the survey are quite general; however, in spite of the fact that the information provided by the respondents testifies that the most frequent working languages of the respondents are English, Russian, and German. Respondents also indicate Spanish, French, Estonian, Lithuanian and others as their work languages. The respondents use both electronic and printed dictionaries, as well as other sources for their studies or work. Sometimes they only use printed or the so called “paper” dictionaries and other printed sources, since they are not available electronically but they are still needed for work. This indicates that a book as a classical form is still of great value, thus associating with I. Balode’s views. I. Balode (2017, p. 34) emphasises that a book as a traditional medium still has a stable and strong position in every cultural environment. Four respondents add that a specialised Latin-Latvian dictionary is acutely needed. Another respondent indicates that a trilingual dictionary of English-Russian-Latvian is practically necessary, and that there are still no equivalent dictionaries to one of the most best-selling French dictionaries *Le Petit Robert* in the Latvian lexicography.

Respondents indicate various advantages and disadvantages related to both electronic and printed dictionaries. The following disadvantages are the most common: incompleteness of the dictionaries, lack of equivalents in the necessary target languages, complicated and inconvenient use of the dictionaries, and the unreliability thereof. The abovementioned criticism is directed at electronic and printed dictionaries. The author of the study recognizes that the critical marks are also pointed out in several lexicographical studies, and the principle of selecting entry-words is one of the greatest problems for lexicographers (Baldunčiks, 2012b, p. 115; Brjuhovecka & Rozenberga, 2015, p. 97; Denisov, 1982, p. 89; Priedīte, 1990, p. 63; Veisbergs, 2015, p. 156).

Respondent Answers to the Third Survey Question

The third question of the survey. Please describe briefly what the form of a new dictionary of botanical

terms should be (the desired languages, volume, dictionary environment: e.g., printed paper dictionary, a mobile application, and other characteristics)! Two respondents have not provided an answer this question (having answered “I don’t know”). Thus 112 respondents (98%) have answered to this question in total. The majority of the respondents—110 or 96%—have indicated the desired languages; whereas four respondents have not indicated the desired languages for the potential new dictionary of botanical terms. They provide the following answers: “a multilingual dictionary”, “a polyglot dictionary”, “dictionary of the main European languages”, and “the more languages, the better”, without providing any further details. The majority of the respondents consider that a dictionary of botanical terms should definitely include translations of terms in Latin (43 or 38% of the respondents). Several respondents emphasise the necessity of this language, indicating that Latin is the only language that helps to identify the plant that is being searched; Latin is the only language where the user can do their work interruptedly, and find the plant name in any other language of interest. Respondents indicate English and Russian as two of the languages of the new dictionary of botanical terms, which are indicated by 39 respondents (34%); 21 respondents indicate German (18%); six respondents indicate French, six respondents indicate Lithuanian, four respondents indicate Spanish, three respondents indicate Estonian. Some respondents also indicate Italian, Swedish, Polish, and Czech. Two respondents express a particular request to include German in the new potential dictionary of botanical terms, as they have concluded during their work that it is often difficult to find German equivalents of terms in the existing dictionaries.

Only 14 respondents (12%) express an exact opinion about the volume of the dictionary; many of them indicate—“the larger it is, the more valuable it is”; two respondents indicate that it should be “as large as possible (having several parts, if printed, with the possibility to carry it along)”. Several respondents indicate that the volume of the dictionary depends on how many botanical terms exist in total. Altogether, the respondents express the opinion of a dictionary containing from several hundred up to 10,000 words (with the inclusion of the broad range of plant synonym names).

In total 107 respondents (94%) have provided an answer as regards the potential environment of the dictionary (an electronic or printed dictionary); seven respondents (6%) have not expressed their opinion regarding the environment of the dictionary; 39 respondents (or 34% of the respondents) would like an electronic and a printed (paper) dictionary; 56 respondents (49%) would like the botanical dictionary to be only electronic. Four of such respondents indicate that it would be preferable for the dictionary of botanical terms to be electronic, but they are sceptical as regards the dictionary being a mobile application downloadable on a smart device. The small display and possible difficulties of using the search option in such a dictionary are mentioned as the potential disadvantages. Another respondent, a pharmacist, expresses concerns of imagining herself searching for plant names in a smart device at her work (a pharmacy), as a computer or a book as a traditional value and format would seem more convenient. Ten respondents (9%) point out that a new botanical dictionary should be printed as a book; one respondent comments that “it would be preferable for the dictionary to be a hardcover book”.

The aforementioned information suggests that the majority (49%) of the respondents would prefer the new dictionary of botanical terms to be electronic. One third of the respondents consider that both an electronic and a printed dictionary of botanical terms would be desirable and usable; less than 10% of the respondents would prefer and use only a printed dictionary of botanical terms.

The following part comprises a collection of respondent desires regarding other characteristics of the dictionary that can be related to dictionaries in general without regard to the environment of the dictionary

(electronic or printed). The following aspects are emphasised when describing the needs of the potential users of the botanical dictionary in question: it should be convenient, available, or even free of charge (as commented by eight respondents), easy to use, with a simple structure (as commented by six respondents), easy to understand, with explanations provided (as commented by three respondents), and of good quality (as commented by two respondents). The potential users of the dictionary also want the new dictionary of botanical terms to be modern, with references to the origin of the words, the pronunciation, as well as clear references to the taxonomical categories of the plants (as commented by two respondents). Respondents point out that the entries should include information on the older names of plants, variants of the names, the so called popular names, as well as dialect words (as commented by six respondents). Some respondents express an opposite view to the aforementioned criterion, i.e., a dictionary of botanical terms should by no means contain dialect words and the so called popular names, as that would be a cause for confusion. Respondents indicate that the entire dictionary should follow a strict consistency (as regards the use of uppercase and lowercase letters, word spelling or spelling of separate word collocations, formation of word collocations and other aspects).

Some respondents express the desire for a dictionary with such characteristics that do not associate with a multilingual dictionary. Respondents desire that the dictionary would contain information on the use of particular plants and information on their importance, as well as that the dictionary would contain examples and explanations of terms (as commented by eight respondents). The author of the study recognizes that in such a case they require an encyclopaedia or a practical handbook, not a dictionary for translation. Respondents wish that the dictionary would combine both the functions of a translation dictionary and an explanatory dictionary; in addition, 23 respondents (20%) point out that a dictionary of botanical terms should contain clear, good quality pictures: photographs or illustrations.

The following suggestions of the respondents concern an electronic dictionary. An electronic dictionary would have to be updated regularly (opinion of five respondents); however, it should not contain too much information that might obstruct the perception, it should have no advertisements and the so called pop-up windows, it should be linked with other existing and available databases, the largest dictionary websites: www.tezaurs.lv, www.letonika.lv, www.tilde.lv and others. An electronic dictionary should offer modern functions, such as the option to copy terms and the option to synchronise. It should be possible for the dictionary to be easily integrated into various translation tools to use it conveniently when doing practical translation work. Some respondents express an opinion that they would prefer to use the dictionary offline without the need to connect to the Internet, or so that the dictionary could be used in places where the Internet is not available. Three respondents, i.e., a group of gardeners, and two florists point out that it is necessary to include the names of plant parts in Latvian and their equivalents in Latin and various foreign languages.

Florists indicate in their answers that there is a special need for a terminology glossary of the various modern auxiliary materials used in floristry (preferably, an English-Latvian glossary). They also point out that the dictionary should reflect changes in taxonomy so that one could follow them. Florists suggest including not only the names of Latvian plants but also the names of plants, exotic plants, and indoor plants available in the most popular market places. There is an acute need for translations of specialised floristry terms (modern auxiliary materials, exotic plants, and the parts thereof) in Latvian. Gardeners would prefer a dictionary of botanical terms to contain specific information on the protection of plants, names of plant diseases, and their equivalents in foreign languages, as well as pest names and their translations in other languages.

Pupils indicate in their answers that they would prefer such a dictionary of botanical terms to contain 3D elements, so that they could use them in learning the botanical processes and learning the subject of botany (mentioned in the answers of two respondents).

Some respondents express opinions that could be considered as suggestions for the compilers of the potential dictionary of botanical terms. They suggest using I. Ēdelmane's un Ā. Ozola's work *Names of Latvian Plants (Latviešu valodas augu nosaukumi)*, and that field experts should definitely be involved in the development process, as it is self-evident in the development of a dictionary of terms (Kommová, 2005, p. IV; Rudziša, 2013, p. 25; Vachková, 2011, pp. 90-102).

Some respondents express criticism to the developers of the potential dictionary, indicating that nothing new should be invented, and the existing P. Galeniēks's *Botanical dictionary (Botaniskā vārdnīca)* of 1950 would be a good prototype, as it is still usable but its contents should be updated and improved, as well as it should be made available to modern environments. One of the respondents points out that a new dictionary of botanical terms would overlap with the large collections of Tilde un State Language Centre (*Valsts valodas centrs*) term databases, which are planned to be merged in a single database (which is currently in process). Despite some critical remarks, the answers are dominated by positive views; the awareness that a useful and much needed dictionary of botanical terms might be developed is a pleasing news. It asserts that the potential dictionary is really needed and that it would be useful to everybody who encounters such terms in their studies or work and translates such terms.

Conclusions

The idea about the lexicographical concept and work pattern of developing a new dictionary of botanical terms arose when considering the possibility to participate in the internal project competition "Development of Scientific Activity at Ventspils University College". Since the author of the article has so far been dedicated to researching specialised lexis (plant names) in general bilingual dictionaries for translation (see Sviķe, 2014; 2015; 2016), this study ensures succession of the research topic, directing the topic of research towards developing a terminology dictionary. The need for a new dictionary of botanical terms is described by the expanding thematic range of texts to be translated, which contain a large number of specialised lexical units, including terms. The translation market offers more and more texts (such as descriptions of cosmetic products, animal food ingredients, culinary recipes) with botanical terms—plant names.

The respondent answers summarised and described in the article allow drawing the following conclusions. More than 100 respondents participated in the survey. Respondents indicate they use various electronic and printed dictionaries and other sources for work or studies. The major advantages of the sources are quick search possibilities (for electronic resources), a large amount of given information and additional information (for both electronic and printed resources). The followings are the major disadvantages: incompleteness, unreliability, and complicated structure. The majority of the respondents consider that a new dictionary of botanical terms should be available electronically, but a printed dictionary would also be preferable. A new terminology dictionary should be as extensive and reliable as possible, including pictures, having the largest contact languages of Latvian offered, as well as it should include Latin. The new dictionary should also be convenient to use; it should comprise the features of an explanatory and translation dictionary. A new-concept dictionary of botanical terms would be a useful tool for those who translate terms of this field for their studies or work.

The topic of the following studies should be extended towards researching the methods and approaches to terminology dictionaries with a special emphasis on the new opportunities offered by IT, as well as the solutions in developing terminological publications based on corpora. Description of the experience and sharing the issues defined during the compilation process of the dictionary and the possible solutions to the issues contribute to the development of future dictionaries. Therefore, the author's subject of further research will be the study of the lexicographic concept and work pattern of the terminology dictionary.

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