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Linguistic scenery in Latvian botany textbooks (1880s–1940s): Stable and varying features

Lingvistinė latviškų botanikos vadovėlių (1880–1940) apžvalga:
 stabilūs ir kintantys bruožai

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Abstract

Texts, including original botany textbooks (not translations or adaptations) produced in the second part of the 19th century and early decades of the 20th century embody a period of intense linguistic development in the Latvian language. This paper provides a linguistic analysis of the features of two botany textbooks: *Botānika tautas skolām un pašmācībai* (*Botany for Folk Schools and Self-Education*) by Jānis Ilsters (1883) and *Botānika* (*Botany*) by Pauls Galenieks, also citing its further editions (1924–1945). The aim of the study is to collate data that is representative of morphological, syntactic and lexical changes and stable elements from these texts. The respective linguistic phenomena are discussed and analysed in the context of language facts present in several dictionaries and other relevant publications. The data obtained in this study illustrates that by the end of the period covered in this paper, the process of turbulent linguistic changes in the Latvian language had been replaced by more balanced development with some indications of stabilisation, although numerous features remained variable and dynamic. Despite a number of the syntactic and lexical elements recorded in the main sources of the study having since changed and/or become obsolete, these textbooks provide evidence that both the Latvian language and the linguistic materials used in botany were to a great extent already well developed and had begun to enter the stabilisation phase. In recent years, botany has become an area of increased linguistic interest among botany experts and linguists themselves, although the collation of a detailed data set detailing the development of the whole body of specialised lexis used in botany remains a task for the future.

KEYWORDS: specialised lexis, terminology, compounds, language change, botany.

Introduction

The second part of the 19th century and early decades of the 20th century represented a period of intense linguistic development within the Latvian language. Thus, texts from that time embody these respective changes. Among the many periodicals and literary creations, textbooks also contributed toward progressive accumulation of original Latvian publications, which were not translations, or German-Latvian or Russian-Latvian adaptations where borrowing dominated all the text-building

elements and lexical material. Even as late as 1924, Pauls Galeniēks, a prominent Latvian botanist, admitted that all the previous Latvian textbooks in botany had been shortened translations from German or Russian, and so failed to illustrate and discuss the features specific to local flora (Galeniēks, 1924, p. 3)¹.

This paper provides a strictly linguistic insight into the features of two botany textbooks: *Botanika tautas skolām un pašmācībai* (*Botany for Folk Schools and Self-Education*) by Jānis Ilsters (1883; henceforth T1) and *Botanika* (*Botany*) by Pauls Galeniēks (1924; henceforth T2), including its corrected and elaborated third edition in 1929 (henceforth T3), and fifth edition in 1945 (henceforth T4)². For the purpose of contextualization, we also include references to several dictionaries and other relevant sources. The aim of the study is to identify and analyse morphological, syntactic and lexical changes and stable elements observed in botany textbooks published in the period of 1880s–1940s.

Methods

To achieve the goal of this study, the paper provides, by applying the methods of qualitative research, a strictly linguistic insight into the morphological, syntactic and, most importantly, lexical features of two botany text books: *Botanika tautas skolām un pašmācībai* (*Botany for Folk Schools and Self-Education*) by Jānis Ilsters (1883) and *Botanika* (*Botany*) by Pauls Galeniēks (1924), including its corrected and elaborated third edition in 1929, and fifth edition in 1945 as the respective linguistic facts would demonstrate, through empirical research based on collection (extraction) of representative units from the source texts and analysed respectively, typical patterns from the period and also suggest conclusions regarding stable and variable features and elements of the Latvian language. For the purpose of contextualisation, we also include literature review, namely, references to several dictionaries and other relevant sources. Meanwhile, the specialised nature of this area implies limits and constraints that provide the requisite focus and specific context for the facts and details included. This thereby avoids the study slipping dangerously into vague generalisation. It is also due to considerations of focus that we do not include comments upon orthographic features and changes, as these can be tracked and explained by the standards, instructions and typical features of application presented in publications on Latvian grammar and orthography (for instance, see Cukurs, 1898; Endzelīns, 1951; Jansone, 2008; Mīlenbahs, 1908; Mīlenbahs & Endzelīns, 1907; Ullmann, 1883).

As Galeniēks' publications feature minor changes, i.e., *Viņām sekodami, mēs iemācāmies* (T1, p. 5) to *Tām sekodami, mēs iemācāmies* (T4, p. 3), such editorial scrutiny implies the reliability and relevance of the linguistic phenomena observed in the texts (however, the texts include multiple instances of misspelling³). Along with a note provided by Rūdolfs Grabis (1978, p. 115), stating that the 19th century authors of Latvian textbooks were among those users of Latvian who possessed the best linguistic competence and who applied the best written text practices, we should also credit both Ilsters and Galeniēks for producing texts that became benchmark embodiments of area-specific knowledge and linguistic skills. These are essential prerequisites verifying the methods and relevance of further inquiry.

The aspect of text tones: moods written into the text

Results and Discussion

Here we consider, first, the lexical elements that form the moods and attitudes expressed in and throughout the texts. To achieve this, the 1883 textbook embodied the full range of typical text-building features from that time. Although the author's attitude, when assessed relative to modern textbooks, may seem naïve and excessively personal, it exemplified what was then a typical contemporary approach. Moreover, such elements might also be considered as a means to make the text more

¹ Galeniēks' books also included borrowed elements, for instance, some of the illustrations; it is also noted that some illustrations describe plants which were not observed in the local flora (see Carex, 1924).

² The term *folk school* refers to an elementary school from the respective period associated with the Reformation movement (other terms found included rural school, peasant school, parish school, etc. (Laizāne, 2012)). It should also be noted that in some instances this paper also includes references to the 2nd edition of *Botany* (Galeniēks, 1925). We should note that the units of the 1883 publication and other publications of the 19th century analysed in this study have been transcribed according to modern Latvian orthography (thus, *šč is š, ah is ā*, etc.) and Latin letters; however, short vowels are kept according to the original text.

³ In his response to Matīss Siliņš' review, Ilsters (1884) notes that he did have the opportunity to read the text after its *second proof-reading* (our emphasis), a note which also provides some details as regards the proofreading and editing procedures used by periodicals during the time.

attractive and engaging, when other resources (including diverse visual text elements) were highly limited. The use of the units creating attitude may be described as intense, as shown in the several examples here:

- 1 *Jo tikko siltais saulesztars balto sniegasegu kausejis, tad visbulits atver savas zilās, ceribas pilnas ziedu actinas uz jaunu dzīvi* (T1, p. 1);
- 2 *kā ar dzeltenu lakatu pārklāti* (T1, p. 3);
- 3 *ziedulaiks krīt majmēnesi, un tad ir tīri prieks uzskatot šo ziedukoku, tas līdzinājās milzupuķei* (T1, p. 13);
- 4 *kā klētiņa ar 5 apcirkņiem – a figurative description of the core* (T1, p. 16);
- 5 *[..] rāda katra koku suga savadu seju jeb fiziognomiju. Bērzs mums parādās lēnīgs un pieglaudīgs; ozols turpretim ar savu pilīgu, spēcīgu stāvu, saviem sparīgiem, elkonainiem zariem rāda stingru vīra dabu* (T1, p. 19);
- 6 *Jo patīkami ir tad it kā pārmaiņšanas dēļ mineto krāsū ztarpā ari koši zilo meža=veroniku ierauzit* (T1, p. 30).

This implies that figurative lexical units, poetic inversion and other stylistically marked techniques were considered both standard and important features of text formation, i.e. textuality.

However, the use of figurative elements was almost entirely precluded in the 1924 textbook (Galenieks, 1924). Text resources aimed at engaging students did not extend beyond several expressive epithets, comparisons and stylistically coloured words (*[v]jainags turpretim ziedam ir itkā krāšņa izkārtne* (T2, p. 36); *[s]jiltās zemēs dažas kosas apslēpj savās audzēs pat jātnieku ar visu zirgu* (T2, p. 183; T4, p. 178); *kā to dažreiz blēņpodamies darām ar noplūktām puķēm* (T2, p. 192; T4, p. 190); *sirma senatne* (T2, p. 217), *izskatās pēc brīnumainiem kokiem* (T2, p. 201)) or facts that provided additional context or background information (*Romas ķeizaru laikos tika audzētas veselās rožu plantācijas galma dziru vajadzībām* (T2, p. 197)); these items were also used in T4⁴.

For comparison purposes, a botany textbook for students at grade 7, published in 2012 (Aizpure, 2012), featured highly formal language, which was counterbalanced by diverse visual elements, for instance, a regular text section marked with an icon in the form of a palm reaching towards the reader (ibid., p. 17). We were only able to record a few more expressive units, including *Kas gan var būt skaistāks par atpūtu mežā! [..] Egles ir ļoti skaisti koki; sirma senatane* (ibid., p. 75, 190) and some value- and awareness-building units, for instance, *[m]eži ir Latvijas dabas bagātība* (ibid., p. 197).

Syntax, specific expressions

The source texts include obsolete syntactic structures, which were either only observed during the time period when Ilsters' textbook was published, or migrated across various phases of the development of the Latvian language and texts respectively; in the majority of cases, modern Latvian texts only feature these as stylistically marked units:

- 7 *iz zemes* (T1, p. 3) – now 'no zemes'; *par ziemu* (T1, p. 7) – now 'ziemā', 'ziemas laikā';
- 8 *tiem jau mīl siltaks gaiss* (T1, p. 73) – now 'tie jau mīl siltāku gaisu' or, more formally, 'tiem vajadzīgs siltāks gaiss';
- 9 *tā lapas, kā stublajs* (T1, p. 55) – now the typical construction is 'kā..., tā...';
- 10 *[s]chi grāmatiņa ari grib pie tam skolām nākt palīgā; pie stādu aparkstiem ir savienotas* (T1, p. III); *augus [..], pie kuriem krīt acis lielā vienkāršība uzbūvē; to ik dienas novērojam pie [..]*

⁴ Meanwhile, in a review (Carex, 1924) it was noted that the text included some anthropocentric expressions, personifications, e.g., *katrs augs cenšas panākt* (every plants tries to ensure).

- augiem* (T2, p. 7; T4, p. 3, 5); *temperatura ir no svāra pie asimilācijas* (T2, p. 106)⁵; it should be noted that the 1945 text included an arguable lexical update *temperatūrai ir nozīme pie asimilācijas* (T4, p. 94) though the idiom *būt no svāra* was widely used both at the time and later; just since late 20th century its use has become less typical in formal Latvian;
- 11 *pēc sava izplatījuma sirdsveidā* (T1, p. 11); *[k]koks klajumā augdams izaug pēc sawas dabas* (T1, p. 38); *[s]katoties pēc sava veida, drīksna ir lodveidīga* (T2, p. 7; T4, p. 3, 5);
 - 12 *līdzet caur ravešanu* (T1, p. 53); *caur giftīgu sēņu baudišanu miruši* (T1, p. 104); *palielinājas caur citiem apstākļiem* (T2, p. 67); it should be noted that the 5th edition featured another prepositional construction which is now obsolete (*palielinās aiz citiem iemesliem* (T4, p. 55)); *iesākas pātrināta augšana, caur ko vītne sāk liekties* (T2, p. 142; T3, p. 148); the construction was updated in the 1945 text; it also no longer corresponds to modern standard Latvian: *iesākas pātrināta augšana, kāpēc vītne sāk liekties* (T4, p. 125-126); in another instance, the construction with *caur* in *ceļas caur dažu sēņu [...] kopdzīvi* (T2, p. 175; T3, p. 194) is replaced by *ceļas no sēņu un aļģu kopdzīves* (T4, p. 167) though from the current perspective the word *ceļas* should also be updated to 'izriet no', 'izraisa', etc.;
 - 13 *maciņi var būt nekustīgi un šūpojošies* (T2, p. 39), replaced with *putekšņicas var būt nekustīgas un šūpojošās* (T4, p. 34); the units also featured a terminological change: *maciņš – putekšņica*;
 - 14 *pa dienu un nakti dod 5-6 1/2 litra sulu* (T2, p. 99; T4, p. 88) – now 'litru sulas';
 - 15 *mitrumā zem baktēriju un sēņu iespaida* (T2, p. 123; T4, p. 109) – now 'baktēriju un sēņu ietekmē'; it should be noted that the 1945 text at least included the lexical update: *iespaids* is replaced by *ietekme*;
 - 16 *auga daļas tiek iespaidotas no zemes smaguma spēka* (T2, p. 140; 1925, p. 143); however, the 1929 included a syntactic update which is still used in modern Latvian: *auga daļas ietekmē zemes smaguma spēks* (T3, p. 145);
 - 17 *tie tiek apputināti no naktstauriņiem* (T2, p. 145; 1925, p. 150); the construction is however replaced in further editions to *tos apputina naktstauriņi* (T3, p. 152) which is syntactically consistent to modern standard Latvian (also, it is *apputeksnē* in modern Latvian instead of *apputina*); *galvenā ass te, attīstījusi vienu ziedu, apstāj augt un tiek no saviem atzarojumiem pārsniegta* (T2, p. 49; T4, p. 40) – now: 'to [galveno asi] pāraug atzarojumi' or alternative expressions;
 - 18 *iekšējie audi ir ļoti ūdeņaini un sausā laikā, kad saknes nevar augam ūdeni piegādāt, uz tur lapā dzīvības norises* (T2, p. 33; T4, p. 26); *Dienvidlatvijā aug vairākas magoņu sugas savvaļā, labības laukos* (T2, p. 195; T4, p. 193) – inversions similar to this (standard word order would be 'saknes nevar augam piegādāt ūdeni' and 'Dienvidlatvijā vairākas magoņu sugas aug savvaļā' respectively) were a typical syntactic feature of the texts discussed in this study which now seem poetic and inappropriate; we also recorded an instance where direct word order in the 1924 text (*[k]ā nepatīkama nezāle labībā ieviešas vēja kaņepes* (T2, p. 203) was later replaced by an inversion (*Kā nepatīkama nezāle ieviešas labībā cietgraudes* (T3, p. 232; T4, p. 202);
 - 19 *ziedputekšņa saturs savienojas ar olšūnas kodolu, pēc kam olšūna iegūst spēju attīstīties* (T2, p. 44; T4, p. 37);

⁵ The fact that these prepositional constructions were already replaced by syntactic updates in the Latvian language was illustrated by a review (see Bullis, 1924, p. 73) of the draft botany textbook by Jūlijs Traubergs, e.g., *pie sēnēm šūnapvalks nesastāv no celulozes – sēņu šūnapvalks nesastāv no celulozes*.

- 20 [k]a ūdens tiešām tiek vadīts uz augšu pa stumbra vadu kūlīšiem, to var novērot (T2, p. 98; T4, p. 87) – this syntactic pattern where sentences start with the subordinate clause introduced by conjunction *ka* is no longer typical for standard Latvian;
- 21 [v]ainaga atvēršanai vajadzīgs diezgan daudz spēka, kāpēc sīkāki kukaiņi ziedā nemaz nevar iekļūt (T3, p. 226; T4, p. 196) – now syntactic consideration would require to replace the units by ‘vajag daudz spēka’ or ‘vajadzīgs liels spēks’ and ‘tāpēc’ respectively;
- 22 [d]ienvidos šis apgabals balstas uz Lietuvas robežu (T3, p. 258); the 1945 at least included a case update which is also in line with the modern standard Latvian: [d]ienvidos šis apgabals balstās uz Lietuvas PSR robežas (T4, p. 226).

Another note should be made with regard to sentences with zero-form verbs (see Auziņa et al., 2013, p. 734; Kalnača, 2016), which represented a stable feature in the source texts of this study: *Kad zieds [ir] pilnā ziedežanā* (T1, p. 3); *Lilijai zemē [ir] liels dzeltens sīpols* (T3, p. 247; T4, p. 215)⁶.

Finally, in terms of the aspect of change in these texts, we observed that some sentences in Galeniēks' textbooks featured complex changes, including with regard to word order, use of commas and orthography; for example, compare:

- 23 *Lilijas audzina dārzos no sirmas senatnes; balto liliju, kā nevainības zībolu, min jau pirms Kristus* (T2, p. 217);
- 24 *Dārzos lilijas audzina no sirmas senatnes; balto liliju, kā nevainības simbolu, min jau pirms Kristus* (T3, p. 247);
- 25 *Dārzos lilijas audzina no sirmas senatnes; balto līliju kā nevainības simbolu min jau pirms Kristus* (T4, p. 216).

Lexis of the source texts: general features

The lexical units in the texts represent the dynamic situation both in the Latvian language and in the specific area of botany when they were written. For instance, unstable use or meaning was sometimes indicated by *tā saucamais* ('so-called'): *tā saucamās bakterijas* (T1, p. 104), the vague description *sakņveidīgi darinājumi* (T2, p. 167) later became *sakņveidīgi ataugumi* (T3, p. 181), and some unstable words and/or word forms co-existed with those that later remained in standard Latvian: *pārgrozības* (T2, p. 13; T4, p. 9); *pārgrozījumi* (T2, p. 113; T4, p. 101), and *pārveidošanās* (T2, p. 151; T4, p. 9).

However, multiple features of the 1924 textbook also indicated that in many respects the terminology of botany had already matured, leading to some initial stability. One of the reasons for this was the importance of plants to everyday life (e.g., for food, clothing and medical needs) since ancient times. The lexicographic development of Latvian lexis in botany dates to as early as the late 18th century (Fischer, 1778). For instance, the classification of *neveroņi* and *atveroņi* (T2, p. 53) (the term *neveroņi* was preceded by *neatveroņi* (T1, p. 111); *atveroņi* later changed to *veroņi* (T4, p. 41)), and the relevant terms are largely still in use (Ilziņa et al., 1995, p. 93). However, in the 1883 text it was already apparent that some terms and their specific definitions also illustrate a level of elaboration: *dzelonis* ('prickle'; a short outgrowth on the bark⁷) and *ērķšķi* ('thorn'; it grows from the stem itself) (T1, p. 47).

We should note that a recent *Angļu-latviešu, latviešu-angļu bioloģijas terminu vārdnīca (English-Latvian, Latvian-English Dictionary of Biology Terms)* (Štrauhmane, 2008), a reference used in the preparation of this study, does not provide sufficient clarity with regard to the semantic differences: *prick* – *dzelonis*, *ērķšķis* (113); *spine* – (*bot.*) *dzelonis*, *ērķšķis* (133); *thorn* – *dzelonis*, *ērķšķis* (143). However, pragmatically this vagueness correlates with typical language practices, as Latvian speakers usually use *dzelonis* and *ērķšķis* interchangeably, and both Latvian

⁶ Another publication of the period also indicates that the zero-form predicate is even used in questions: *Vai zvaigžņu pasaules [ir] apdzīvotas?* (Omegars, 1940, p. 8). Here we should note that Omegars is a pen name for Pauls Galeniēks that he used for his popular science publications.

⁷ Here and elsewhere in the paper we provide our translations from non-English sources and references.

and English terms denote specific parts of plants and represent synonyms with clear semantic shifts. English definitions include: *thorn* – a degenerated, sharp pointed branch, either simple or branched (Crozier, 1892, p. 185); *prickle* – a small, sharp, stiff outgrowth from the epidermis (ibid., p. 139); *spine* – any sharp, rigid process of considerable size which is not a transformed branch; especially an organ, such as a leaf, stipule, tooth, etc. (ibid., p. 167). Specialist dictionaries are necessary to identify these differences, as users may become misinformed unless they also consult additional explanatory sources. Moreover, as an option, specialist dictionaries could in specific cases also include shortened explanations. The English-Latvian Dictionary itself features additional information set out in numerous units, for instance, *veronica*, *speedwell* (*Veronica*) – *veronikas* (*cūknātru dzimtas ģints*) (Štrauhmane, 2008, p. 151); *achene* (*achenium*) – *sēklenis* (*sauss auglis, viensēklas neveronis*) (ibid., p. 267); *follicle* – (*bot.*) *somenis* (*sauss auglis, daudzsēklu veronis*) (ibid., p. 54).

However, the extensive changes observed, even within a short time period, were illustrated by an elaboration upon this description:

- 26 *Katra dzīva šūna ir mazs, neapbruņotai acij pa lielākai tiesai nesaredzams, pūslītis. Pūslīša plēvītē jeb šūnapvalkā ielēgtas šūnas svarīgākās sastāvdaļas – gļotaini pusšķidrā dzīvības pamatviela jeb protoplasma un viņā iegremdētais kodols.* (T2, p. 60; T3, p. 59)
- 27 *Katra dzīva šūna ir mazs, neapbruņotai acij pa lielākai tiesai nesaredzams ķermenītis. Šūnas plēvītē jeb šūnapvalkā ielēgts tā saucamais prōtoplasts, kas sastāv no gļotaini pusšķidrās dzīvības pamatvielas jeb citoplasmas un tanī iegremdētā kodola; citoplasmā izkaisīti arī bezkrāsaini vai krāsaini graudiņi, kurus sauc par chrōmatoforiem jeb krāsnešiem.* (T4, p. 49)

The texts included specific lexis or word forms that have since disappeared or almost disappeared from everyday use:

- 28 *sulots* (4), *sauligs* (T1, p. 76) (though the currently more typical forms *sulīgs* and *saulains* were also used at the time; a brief inquiry into periodicals indicates that *sulots* is very rarely used since late 1990s);
- 29 *gremzdulaiks* (T1, p. 17) which is said to be the most favourable time for grafting⁸;
- 30 *stādu dzimta* (slaka) (T1, p. 30) – here the most relevant aspect is the translation: *Gattung* (in German) or *genus* which in Latvian is now known as ‘ģints’; it is also indicated in the text that several *dzimtas* (German *Familie*) are combined into *familija*; instead now next taxonomic level in Latvian is *rinda*; several genera (‘ģintis’) are combined into families (‘dzimtas’);
- 31 *svešzemes ķerpju sugas* (T1, p. 68); *vārams sāls* (T1, p. 69) – illustration of the use of singular forms or indefinite endings where currently plural and definite endings are a more typical feature;
- 32 *novirzības* (T2, p. 19; T4, p. 137) – no instances of ‘novirze’⁹;
- 33 *sekotnība* (T3, p. 280; T4, p. 241) – no instances of ‘secība’¹⁰;

Other instances in Ilsters 1883 were *zieduputekļi* (‘ziedputekšņi’) (p. 3) (*apputināšana* is still used in Galenieks 1945); *reizā ar ziediem; dažados vidos* (‘apvidi’) (p. 2); *sagiftejot* (p.3) and *giftīgs* (‘indīgs’; we should add a note that *ģiftīgs* is still used in Galenieks 1924) (p.6); *drusku uz zemi nokārušies* – *paknubu* (p. 8), *ar apliekušos jeb pak-*

⁸ A period in late spring or early summer when trees shed bark.

⁹ At the time both words were used extensively; they were also seen as marine terms: *novirze* (also: *variācija*) for the Russian *склонение* or the German term *Variation*; *novirzība* for the Russian term *увальчивость* and the German term *Leegierigkeit* (ZTV, 1922, p. 151, 152).

¹⁰ Lexicographic sources and periodicals indicate the use of competing synonyms *secība*, *secenība* (Mīlenbahs, 1923–1932, III, p. 810) and *sukcessivitāte* (Celms, 1921, p. 880) or *sukcesija* (e. g., several uses in periodicals in 1923). At least two of these are still sometimes used: *secenība* appears in a publication from 1985: *patoloģisko procesu secenība (patogēnēze)* (Skuja, 1985, p. 7); *sukcesija* is a legal concept used in the 1920s–1940s and was present in several publications in the 2000s (it is also indicated as a theological term: *apustuliskā sukcesija* (Latvijas Vēstnesis, 2010, p. 27)). The word *sekotnība* was used as a short-term phenomenon only observed in several publications in 1930s.

nubu ztāvošu galotni (p. 87); *guļ pacilu jeb pazvilu gar zemi* (the text indicates the Russian word: *приподнятый*) ('pusstāvus', 'puspaceltā stāvoklī'); *pārmīšu* ('pamīšus'); *apauglinašanas= (vaislošanas=) rīki*¹¹ (p. 24); [*no luhka auž*] *mašas (ragošas)* (p.34)¹²; *tauku eļva*¹³, *rapšeļva* (p. 27); *karotas* (p. 76)¹⁴; [*taukas eļvas ir*] *cietas (tvirtas)*; *sal-dans* (p. 54); *eļvas= jeb olivukoks* (p. 89)¹⁵; [*stublaji ir*] *abjupasmenigi* (in Russian: *обоюдно-заостренный*) ('ab-pusgriezīgs') (p. 67) (compare: *lapas plātne velkās līdz abpusēs līdz zemei* (pp. 7-8) and *abpuš kātām* (p. 108)); *zēvele* ('sērs') (p. 69), *atskarbi zobaina [apmale]* (p. 83), *kafeja, kofeīns* (p. 84); [*putni*] *ieviessināja* ('ieviesa'), (*pār*) *akmiņots* (p. 38, 40, 94), *laika pareģone* (p. 97).

We observed lexical items which featured changes in their gender over the period of publication (*vasas daļas sauc par ziedu sastatiem jeb ziedkopiem* (T2, p. 46; T3, p. 48) – *vasas daļas sauc par ziedkopām jeb ziedu sastatiem* (T4, p. 38).

In some instances, the change profile is of more complex nature when considered within a longer time span. Galeniekš's texts featured *augu kustoju jeb bastardi* (T2, p. 148; no instances of 'hibrīdi'), later – *bastari* or *hibrīdi* (T3, p. 159; T4, p. 134). Lexicographic sources of the time period included *mistrenis*, *bastards* and *hibrīds* (Zinātniskās terminoloģijas vārdnīca [ZTV], 1922, p. 48) (*гибрид; Michling; Bastard*), and *hibrīds* and *bastards* (Loja, 1937, p. 25) (*гибрид; Michling; Bastard; hybrida*). Meanwhile, *jauktenis* was indicated as the Latvian equivalent for the Russian term *помесь* (Loja, 1937, p. 84). The lexicographic sources of 1990s–2000s included the following information: *hibrīdi* for *гибриды*; *hibridizācija* and *krustošana* for *гибридизация* and *скрещивание* (Latin *hybrida* – *jauktenis*) with an additional note: [*h*] *hibridizāciju sauc arī par jaukteņu jeb bastardu iegūšanu* (Klintsone, 1997, p. 67); *hibrīds* for *гибрид* (Pupiņš, Škute, 1999, p. 24) (no instances of *bastards* or *jauktenis*); *hibrīds [lat. hybrida jauktenis]* (Zinātnes un tehnoloģijas vārdnīca, 2001, p. 260); *hibrīds* for *hybrid* (Štraumane, 2008, p. 205).

As to some unfavourable phenomena, we obtained additional evidence that excessive and unmotivated use of the pronoun *savs* had been a long-standing phenomenon in Latvian (*Kamtsatkas apdzīvotaji saģiftejot savas bultas* (T1, p. 3), *kad zieduputekļi no saviem maciņiem izbiruši* (T1, p. 5), *krustziedaiņi savās citās daļās satur savadu sivumu* (T1, p. 27), *izsaku savu pateicību; arī saviem darba biedriem* (T2, p. 4), *pārsniedz savus agrākos apmērus* (T4, p. 31), *zarodamies novieto savus zarus* (T4, p. 40).

Some lexical items and/or constructions of the source texts are no longer accepted in modern standard Latvian (*pat nāvi varot dabūt* (T1, p. 6), *dabu caur pulierešanu īsti tīkamu izskatu* (T1, p. 16), *tad dabūjam tīsteni* (T2, p. 49), [*v*] *asa dabū savu raksturīgo izskatu* (T4, p. 12); *mēģinājumu [...] var izplildīt arī šā* (T1, p. 260; T4, p. 254); *5-os no rīta* (T1, p. 267; T4, p. 260); *pie sēklotnes izveidošanās ņem dalību* (T2, p. 42); *pie tās izveidošanās ir ņēmušas dalību* (T4, p. 35)

The publications illustrated that some words were only accepted slowly. As noted by Silga Sviķe, a key Latvian botany term, *augš* ('plant') did not spread quickly during the second part of the 19th century (Sviķe, 2021, p. 115). In the 1870s and even in early 1880s the initial term *stāds* (ibid., p. 112) and its subsequent variant *augš*, two terms that now possess a distinctive semantic difference (*augš* – *plant*; *stāds* or *dēsts* – *seedling*), were used as synonyms. In 1883, Ilsters used *stāds* and did not use *augš*; however, the text included *augšanas vieta*, *augt*, *noaugt*, *uzaugt*, *stādi*, *stādu mācība*, and *stādu valsts*¹⁶. Meanwhile, along with the verb *stādīt* ('to plant') no

¹¹ In his review, Siliņš (1884) suggested to use *apauglinašanas organi*, a use which closer to modern Latvian specialised lexis *vairošanās orgāni* (reproductive organs).

¹² German *Schlitten: sāņi; kammanas, maša(-as)* (*Jāņa Langija latviski-vāciskā vārdnīca*, 1685, in Blese, 1936, p. 107, 230).

¹³ Later Ilsters (1884) noted that he preferred *eļva* (oil) instead of *eļja* or *eļļa* as he considered the latter two words close to the German *Oel*. Ilsters also described the lexical assimilation patterns illustrated by the transformation of *ciris* to *cirvis* (axe) and *purs* to *purvs* (bog, swamp).

¹⁴ See another publication in 1882: [*w*] *issmalkaka burkanu zurte ir karoti (Carottchen)* (Baltijas Zemkopis, 1882).

¹⁵ Compare: *oeln=kohks* (*Jāņa Langija latviski-vāciskā vārdnīca*, 1685, in Blese, 1936, p. 184).

¹⁶ Similarly, the text includes the word *kustonis* ('animal') and the multi-word term *kustoņu valsts* (T1, p. 21). This indicates that the word *dzīvnieks*, which had been used since the mid-19th century (see Karulis 1992, p. 259), and which has since then out-competed *kustonis* was also only slowly accepted by language users. Galeniekš' book dated 1924 only includes one use of the word *kustonis*: *garāmejošo kustoņu vilnā* (T2, p. 59).

instances of 'dēstīt', a long-used synonym at that time, were observed in the text. Galenieks used *dēstīt* (T2, p. 185; T4, p. 176); *dēstāms* (T2, p. 189; T4, p. 185); however, no noun-form use was evident (compare: *рассада – stāds, dēsts; рассадник – dēsta audzētuve* (Loja, 1937, p. 93), and there were no instances of *stāds* or *dēsts* in Pupiņš, Škute, 1999); *seedling – 1. sēklaudzis; 2. dēsts, stāds* (Štraumane, 2008, p. 127); *transplant – pārstādīt; pārdēstīt* (ibid., p. 146).

The texts included many instances where explanations, synonyms or variants of the specialised lexis were provided. This followed, first, from the explanatory function of the books, second, from the general communicative nature of botany, and third, typical features of the use of lexis in the respective period of time. Botany has always been both an area of academic scholarship and everyday interest, with many people contributing towards its diverse vocabulary. Thus, scientific names have been used along with other items of specialised lexis, which have typically not been stable, tended to be diverse and changed arbitrarily; they could also possess regional features and belong to specific dialects. Some plant names may include dozens of variants (Ēdelmane, 1993, p. 29). On the other hand, text-building and practical consideration implied the necessity of adopting uniform standards to present specialised lexis in order to avoid misleading variations and thus confusion. A further reason for lexical variants was the developing and variable character of the Latvian language. The synonyms introduced represented the effort of finding the 'right' word¹⁷. Some of the units used in the 1883 text are listed here: *spilviņas (matiņi, puchinas); lapas izplatījums jeb plātne; lēvari (staras); iesākumi (aizmetumi); lapas izplatījums jeb plātne* (p. 2), *neaziem (truliem); poļas (pogaļas)* (p. 5); *olveidā (olejada); tšamurā (rajumtā)* (Russian: зонтик); *bikeritis (kausiņš) un kronitis (vainadzīns); šķīvji veidā (šķīvejads)* (Russian: потировидный) (p. 8); *redzam drīksnu (iedzirkli)* (Russian: рыльце); *putekļuceliņš (īrbulis)* (p. 9); *[stublaji ir] tšetrkantaini* (p. 10) and *[kātiņi ir] tšetrkantigi* (p. 11); *zānlapas jeb palapas* (p. 10); *svabads* (p. 16) and *brīvs* (p. 64); *sēklumajiņa jeb serde* (p. 16); *lapu kaktiņos (žaklitēs); gada=augums jeb gadariņķis* (p. 20), *spurdzes (spurganas)* (p. 21); *akmeņu= jeb mineralu=zāles* (p. 25); *destilē (izvelk) [uhdeni]* (p. 29); *lapuzaļums jeb klorofils* (p. 31); *mizas kreve (kraupe); kuceniņi (puhpoli)* (p. 34); *miza jeb kamiens* (p. 37); *dzintars (zītars)* (p. 38); *skābeklis (dzīvībasgaiss)* (p. 40); *izlaidens (lēzans)* (p. 52); *svešēdeji (paraziti)* (p. 53); *plāvu velenā (zelmenis); dzelzszāles ("skābās zāles")* (p. 66)¹⁸; *neorganiskas (minerālu) vielas* (p. 69); *cauru vidu (stobrainas)* (p. 71); *aiteriska (gaisīga) eļva* (p. 75); *zortes (pasugas)* (p. 76); *kuhlītī (buntītē); atmīkstinašana (izlaidinašana)* (p. 82); *Amerikas piena= jeb govkoks (Galactodendron)* (p. 84) *traipekļi (pleķi); [augļu] tšurmiņas (pusliši)* (p. 93); *slimnieki* (p. 84) and *vājnieki* (p. 100); *[sēnes] cepurite jeb ļaupite* (p. 102), *slimiba* (p. 34) and *sērga* (p. 104).

Some instances in Galenieks' texts included: *sarukuši jeb reducēti orgāni* (T2, p. 13); *dzegužpuķes jeb dzeguženes* (Orchis) (T2, p. 219); *sarkanā naglene jeb dzirkstelīte* (T2, p. 189); *dīgsegas jeb integumenti* (T2, p. 43); *ūdens izsvīdināšana jeb gutacija* (103); *[sēklas] iemutītis jeb mikropils* (T2, p. 43); *tīstenis jeb sagriezts sirpis* (T2, p. 49); *kontinentāls jeb cietzemes klimats* (T, p. 253; T4, p. 222); *pazemes dzinumi jeb stolonī* (T2, p. 22; T4, p. 15); *sakņu matiņi jeb spurgaliņas* (T2, p. 23; T4, p. 16); *velteniska (cilindriska)* (T2, p. 25; T4, p. 17); *zieda apvalks jeb apziednis* (T2, p. 36; T4, p. 30); *bedrītes jeb burbiņas* (T2, p. 65; T4, p. 54); *šūnapvalku stingrums jeb spraigums* (T2, p. 91; T4, p. 80); *sēklķermenīši jeb spermatozoīdi* (T2, p. 165; T4, p. 153); *plaši zālāji jeb klāni* (T3, p. 278; T4, p. 240).

Some uses were surprisingly stable; for instance, the unit *lapu zaļums jeb hlorofils* was also used in Galenieks' books (T2, p. 12; T4, p. 9). Synonymic terms that proved even more stable were *sēņotne jeb micēlijs* (T2, p. 112; T4, p. 100). Both still co-exist in modern Latvian: *sēņotne (micēlijs)* (Ilziņa et al., 1995, p. 103); *micēlijs – sēņotne* (Klintsone, 1997, p. 14); however, only *micēlijs – mycelium* is mentioned in the *English-Latvian Dictionary of Biology Terms* (Štraumane, 2008, p. 237) and *micēlijs – мицелий* in the *Bioloģijas terminu vārdnīca (Dictionary of Biology Terms)* (Pupiņš & Škute, 1999, p. 38). Meanwhile, the multilingual electronic Environmental Dictionary (Finnish Meteorological Institute and the University of Helsinki Department of Meteorology, n.d.) indicates *micēlijs* followed by *sēņotne* as a synonym.

¹⁷ However, Siliņš (1884) in his review noted several instances of unfavourable lexical diversity, including *pleksnes, pūkas* and *spilvas* as equivalents for the Russian word *пленки* or *spurdzes, spurganas, kuceņi* and *pūpoli* (*сережки* in Russian or *Kätzchen* in German) thus leaving readers confused regarding the most adequate equivalent.

¹⁸ Compounds with the head *-zāle* were already being used by Fischer to denote a productive plant name in 1778. Even before that, the use *Narcis žāle* was observed in Elgers' Dictionary (1683) (see further in Trumpa, 2014, p. 290).

In several instances, the preferences represented in the text differed from the choice currently made by modern Latvians: Ilsters indicated both *svešēdeji* or *parazīti* ('parasites') but further used only the Latvian variant *svešēdeji* (Galenieks mentioned both the Latvian variant *liekēži* and the borrowed word *parazīti* (T2, p. 25) but used both further in the text). Similarly, Ilsters suggested both *lapu zaļums jeb hlorofils*, but used only the Latvian variant *lapu zaļums*. Another illustration of authorial preferences and/or the process of how language users choose between a borrowed word or one from their own language was provided by the following situation: while at the time two options *iesavināšana* and *asimilācija* existed (ZTV, 1922, p. 46), Galenieks' texts only included the term *asimilācija* (though in one instance it also provided an explanation with a terminological potential: *oglekļa saistīšana jeb asimilācija* (T2, p. 95; T4, p. 84).

The texts featured lexical items that possessed a different meaning, thus they were used in different contexts and/or different syntactic constructions:

- 34 *absolventiem taisni morfoloģijā zināšanas pārāk trūcīgas; tas vedams sakarā ar to, ka* (T3, p. 3) – here *taisni*, from a current perspective, means 'tieši' and *vest* which was a borrowing from Russian *вечму* should be replaced¹⁹ with 'skatīt', 'aplūkot' and so on; *[f]izioloģija iztirzā auga dzīvības norises, vezdama tās sakarībā ar auga vajadzībām* (T4, p. 3) – here 'vest sakarībā' means 'norādīt sakarību', 'kopsaistīt';
- 35 *atjaunošana ('atkārtošana') (IV); stumburi (stumburiņi); gandrīz tīri ('tieši', 'precīzi') taisni;*
- 36 *[p]raktiskos darbus grāmatā neievedu* (T2, p. 4) – here *vest* means 'ieklaut';
- 37 *[v]asa un sakne pie augstākiem augiem norāda uz stingri izvestu darba dalīšanu* (T3, p. 10; T4, p. 6) – here *vest* means 'izstrādāt', 'noteikt';
- 38 *kukaiņu pievilšana* (T2, p. 44; T4, p. 38), *kukaiņu pieaicināšana* (T2, p. 219; T4, p. 59) – here both stand for 'pievilināšana', a word which is, however, never used in the texts;
- 39 *[d]audzi augļi izrīkoti spārnēm* (T2, p. 57; T3, p. 57); this unit was later changed to *[d]audziem augļiem ir spārni* (T4, p. 47) but *izrīkot* was still used in the same function in another sentence: *putekšlapa ar diviem pollinijiem [...], kas izrīkoti ar lipīgu spilventiņu* (T4, p. 132) – now *izrīkot* is 'apriķot', 'apgādāt', etc.; however, in this context the syntactic variant 'pollinijiem, kam ir' would be the most appropriate wording;
- 40 *gaiši liecina par šo slāņu izcelšanos no augu atliekām* (T2, p. 108; T4, p. 97) – now 'skaidri', 'nepārptotami', etc.
- 41 *attīstīšanās ir lielā mērā dibināta uz šo milzīgo enerģijas krājumu izmantošanu* (T2, p. 108–109) – *attīstība ir lielā mērā dibināta uz šo milzīgo enerģijas krājumu izmantošanas* (T4, p. 97); importantly, the new wording included an updated morphological form *attīstība*, but an incorrect case was used (*dibināta uz izmantošanas*);
- 42 *āboliņam tāpēc piekrīt svarīga loma* (T2, p. 199; T4, p. 197) – now 'ir svarīga loma', 'ir svarīga nozīme'; the outdating process is illustrated by the fact that a brief inquiry in periodical sources shows that in 1980s and 1990s 'piekrīt svarīga loma' is only used in Latvian exile periodicals;
- 43 *lilijas audzina* (T2, p. 217; T4, p. 216) – now only 'audzē' is used in this meaning;
- 44 *[p]iegiežoties augu iekšējai uzbūvei* (T2, p. 5; T4, p. 3) – now 'pievērsties';
- 45 *jaunākā laika valda/ senāk valdīja/ gandrīz vai katrā apgabalā ir īpatnēji ieskatī* (T2, p. 122, 127, 173–174); *jaunākā laikā valda/ agrāk valdīja/ senāk valdīja/ gandrīz vai katrā apgabalā*

¹⁹ Again, grammatical recommendations at the time of the publication of Galenieks' book indicate availability of lexical alternatives, e.g., *var vest patstāvīgu dzīvi – dzīvo patstāvīgi; ved parazītisku dzīvi – dzīvo kā parazīts* (Bullis, 1924, 73).

ir īpatnēji *ieskati* (T4, p. 108, 113, 165) – no use of ‘uzskats(-i)’, a word which would probably be a more typical choice in modern Latvian; however, the texts featured the participle *uzskatāms* (T2, p. 9; T4, p. 7) and the verb form *uzskata* (T2, p. 147; T4, p. 134);

- 46 *augu sabiedrības uzrāda arī zināmas vienādības [...] apstākļos* (T3, p. 276; T4, p. 238) – here ‘līdzības’;
- 47 *caur [...] nepiemēroto īpatņu bojā iešanu un piemēroto aizdzīvošanu* (T2, p. 151; T3, p. 164) – now ‘izdzīvošana’; it should be noted that the 1945 text featured a syntactic replacement with another construction now considered obsolete (*aiz [...] aizdzīvošanas* (T4, p. 138)).

Compounds and multi-word terms

Compounding is a productive Latvian word-building technique used in the formation of both common names and terms. Many linguists have previously studied the Latvian compounds used in different time periods (e.g., Ahero, 1965; Elksnīte, 2011; Ēdelmane, 1997; Kvašīte, 2002; Skujiņa, 2006; Sviķe, 2014). Their inquiries have indicated that compounds were widely used long before the texts discussed in this paper, and the theory and classification of compounds was already relatively widely elaborated on in the 19th century (including the contributions of Oto Rozenbergs and Augusts Bīlenšteins; see in Frīdenberga, 2016, p. 21–22). This study also illustrates the use of typical compounding techniques, for instance, generic plant names – eponymous plant names formed by zero affixation and possessing no external features of derivation (*veronika* (T1, p. 30); two-component compounds where the modifier is an anthroponym (*īdānuzāles* (T3, p. 237)), triple-component compounds (*deviņvīruspēks* (T1, p. 33)), including compounds where a stem is an anthroponym (*suņupētersilje*²⁰ (T1, p. 104)), or compounds that also include a suffix (*raganzālīte* (T4, p. 234)) (for further classification details see Ēdelmane, 1978, p. 97–101; Piete, 2008, p. 124–133).

However, specific features and issues apply here. Compounds may be formed and used inconsistently, and they may also possess a regional character. For instance, Marta Rudzīte suggests that, in subdialects, compounds may include full genitive forms that are used more frequently than in standard Latvian (Rudzīte, 1964, in Elksnīte, 2011, 30). Linguists emphasise that criteria for the formation (see, for instance, Ahero, 1979, p. 164–171; Skujiņa, 2002, p. 88–96) and use of compounds are not strictly defined; and, most importantly, compounding techniques are not applied uniformly, leading to parallel forms. The source texts provided in this study vividly illustrate these general observations.

Ilsters (1883) used word-groups with a double hyphen: *zemes=stumbrs* (p. 7); *drudža=zāles* (p. 25); *vienmāju=ziedi* (p. 35); *trīskārt=pluhksnotas* (p. 74); *Vakar=Afrika* (p. 82); *Dienvīdus=Krievzeme* (p. 89); *Dienvīdus=Europa* (p. 90) (compare: *Vidusjuhra* (p. 78), *vidusziedi* (p. 88)); *spraišju=lapiņas* (p. 88); *māju=saimniecība* and *dabas=saimniecība* (p. 97). As indicated by Gita Elksnīte, the use of these units was already inconsistent in texts authored by Georgs Mancelis in the 17th century, and the issue of whether they may be regarded as compounds is also not fully resolved (Elksnīte, 2011, p. 27–29). Elksnīte suggests that not all constructs with double hyphens are compounds (ibid, p. 31).

Compounds used in Ilsters' text included: *lagzduceri* (p. 1); *ziemcietīgs*; *daudcgadīgs* (compare: *daudzgadējs* (T2, p. 13; T3, p. 14) and *daudzgadīgs* (T4, p. 10)); *virsgals*; *virszeme*; *ziedukātiņi* (p. 2) (compare: *zieda apvalks* (p. 8)); *pabalstlapas* (p. 2); *junijmēnesis* (p. 23) (or *junijs* (p. 28)); *dīglalapas* (p. 54) and *asnalapiņas* (p. 61); *caurcaurim*; *žubursakne* (p. 4); *kruhšteja*; *puķudārzs*; *smiltzeme* (p. 9); *pirmsakne* (p. 10) and *zarusakne* (p. 14); *melnbruhnā krāsā*; *saldenskāba*; *augļupumpurs* (p. 16); *dārzābele*; *mežaboli* (p. 17); bet *mežakoks*²¹ (p. 18) and *mežugravas* (p. 43); *vasarasāboli*; *rudensāboli*; *ziemasāboli* (p. 18); *dusalaiks* (p. 21); *Līgo=svetki* (p. 22) un *Ziemassvētki* (p. 39); *lapukoki* (p. 22); *egļumeži* (p. 36); *skujukoki jeb tšiekuraiņi* (p. 40); *puskruhmi* (p. 25); *ztērķelmilti* (p. 29); *kaulsāpes* (incl. examples: *gikts* (now ‘podagra’); *reimatisms*) (p. 39); *sējaslauki* (p. 40); *tīrummala* and *ceļmala* (p.

²⁰ Its scientific (Latin) name *Petroselinum* derives Greek *petra* (‘stone’) referring to the plant’s habit of growing in rocky places.

²¹ The compound form was already used in Mancelius' German-Latvian Dictionary (1638): *Abohlakohx*, *Kļawaskohx*, *Lazda=kohz*, *Pupulo=kohz*, *Ohzola=kohx* (see further in Trumpa, 2014, p. 287).

40); *podupuķe* (p. 50); *krāsuviela* (p. 69); *dārzasaknes* (p. 70); *daždažads*; *biešcukurs* (p. 73); *zirņavabola* (p. 77); *āboļavabola* (p. 78); *stādusugas* (p. 80); *maizeskoks* (*Adansonia*); *kokvilna* (p. 82); *pienazula* (p. 83); *sirdsveidā*; *zāģzobainas* (p. 87); *puķustādi* (p. 89); *pirmdāglis* (p. 93); *suhņusugas* (p. 97); *aknuzāle* (p. 2); *silazeme* (p. 100); *zirņ'augļi* (p. 103).

Some of the compounds require additional comments regarding the further development of their use. In a broader context, the compounds used by Ilsters, *balstaplaiņa* (T1, p. 29) should be compared with the respective practices by Galenieks: *balsta saknes* (T4, p. 18) (compare: *опорный корень* – *balstsakne* (Heils, 1933, p. 4); *balsta audu nozīme* (T4, p. 62); *balstaudu šūnas* (T4, p. 63) and *vadu audi* (T4, p. 63)). In recent decades all terms with the independent component *audi* have become compounds (*balstaudi* (Pupiņš, Škute, 1999, p. 10); *saistaudi*; *vadaudi*, etc. (Ilziņa et al., 1995, p. 412)). The morphological or morphological and syntactic techniques used in forming words or word groups where a component is *balsts* are diverse: *balstaudi*; *balsta orgāni*; *balsta-kustību sistēma* (Pupiņš, Škute, 1999, p. 103, 53); *balsta un kustību orgānu sistēma*; *balstfunkcija* or *balsta funkcija* (Klintsone, 1997, p. 21, 26, 30); *balsta sija*; *balstbrusa*; *balstakmens* (already used in ZTV, 1922, p. 114); *balstbloks*; *balsta reakcija* or *balstreakcija*; *balstatspere* (Krauklis, 2003, p. 121–122); no multi-word terms or compounds with *balsts* or *balst-* included in Štrauhmane, 2008.

Compounds used by Galenieks included: *šķirtlapains* and *koplapains* (T2, p. 38); *zīmoglaka* (T2, p. 98); *tīrkultūras* (T2, 219) (from German *Reinkultur*); *tīraudzes* (T3, p. 283; T4, p. 244); *sakņuzmava* (T4, p. 8); *ilgmūžība* (T4, p. 10); *īsvasas* (T4, p. 11); *ziemeļbriedis* (T4, p. 169) (yet in 1929 a word group is used, *ziemeļu briedis* (T3, p. 197); *kukaiņēdēji* (T2, p. 96); *blakusprodukti* (T2, p. 109); *dabasspēki* (T2, p. 126; T4, p. 112); *pēcnācēji* (T2, p. 147).

Several compounds used by Ilsters became word groups in Galenieks' texts: *puķumeldri* (*Butomus*) (T1, p. 113) – *puķu meldri* (*Butomus umbellatus*) (T3, p. 227)²²; *akņusuhņas* (*Hepaticae*) (T1, p. 98) – *aknu sūnas* (T2, p. 178); *deviņvīruspēks*²³ (*Verbascum*) (T1, p. 33) – *deviņvīru spēks* (*Verbascum*) (T2, p. 224); *lātšusuhņa* (*Polytrichum commune*) (T1, p. 94) – *lāču sūnas* (T2, p. 226); *pīļuzāle* (*Glyceria fluitans*) (T1, p. 64) – *pīļu zāle* (*Glyceria fluitans*) (T2, p. 227); *salakpuķes* (*Pulsatilla*) (T1, p. 3) – *salaku puķes* (*Pulsatilla*) (T2, p. 227); *suņupētersilje* (T1, p. 104) – *suņu petersilis* (*Aethusa cynapium*) (T2, p. 228); *velnarutks* (*Cicuta virosa*) (T1, p. 76) – *velna rutks* (*Cicuta virosa*) (T2, p. 229); *vējakaņepes* (*Lithospermum*) (T1, p. 43) – *vēja kaņepe* (*Lithospermum arvense*) (T2, p. 229) (compare: *vējkaņepe* (*Lithospermum arvense*) (ZTV, 1922, p. 52)); *sienuķērpis* (*Parmelia parietina*) (T1, p. 98) – *sienas ķērpis* (*Xanthoria*) (T2, p. 177); *sienu ķērpis* (*Xanthoria*) (T4, p. 167) (thus, we also observed a nomenclature change; current uses indicate that both the word-group *sienas ķērpis* and compound *sienasķērpis* co-exist).

Aside from the general nature of the use of a language, including specialized lexis, where the element of chaotic practices is always present, some variations may also be caused by insufficient semantic difference in a word group or a compound (Ahero, 1965, p. 19). Meanwhile, we should also note that some multi-word terms have become the standard form of specialised lexis replacing the initial compound form which is typically considered a more formal Latvian variant (e.g., *akņusūnas* → *aknu sūnas* which is still used in botany).

Some compounding instances illustrate changes to the morphological structure: *mātšūna* (T2, p. 62) – *mātesšūna* (T4, p. 51); *lapiņu sēnes* (Zāns, 1924) – *lapu sēnes* (T4, p. 163) – *lapiņsēnes* (Ilziņa et al., 1985, 106; Ilziņa et al., 1995, p. 106) – *lapiņu sēnes* (Pupiņš, Škute, 1999, p. 80); this term is not mentioned in Štrauhmane, 2008.

In some instances, the motivation for using a compound or word group is apparent: *dīgļsaknīte* (T4, p. 77) highlights the type or classification aspect as opposed to *dīgļa šūnas* (T3, p. 67) where the cells of germs are discussed and not specific types of cells. A similar distinction can be observed in these units: *mežmala* (T2, p. 191; T4, p. 189) vs. *mežu zāles* (T4, p. 189); however, we also observed inconsistent use: *mežu malas* (T3, p. 263; T4, p. 228). In this context we observe variable uses: *mežu rozes* (T3, p. 263) or *meža rozes* (T4, p. 228). The compound *mežroze*, which is currently used in standard Latvian, is in line with the principle of forming a compound, where a word in its genitive form ends with a vowel or where a genitive plural word is used (Skujiņa, 2002, p. 93)

²² We also observed a word group with a 2nd declension noun: *puķu meldris* (*Butomus umbellatus* L.) (Smarods, 1910, p. 158).

²³ In Kurzeme *deviņvīruspēks* is also known as *saules svece* (Ēdelmane, 1997, p. 65).

(*meža(-u) + mala – mežmala*). This pattern is approved in the following change: *miežu brālīs* (*Phalaris arundinacea*) (T3, p. 278) – *miežbrālīs* (T4, p. 240) and *raganu zālīte* (*Circaea*) (T3, p. 271) – *raganzālīte* (T4, p. 234).

Specific considerations arise from the figurative description of *vilku zobi jeb rudzu tēvi*, which may then be observed on rye spikes:

48 *rudzu vārpās bieži redzami „vilku zobi” jeb „rudzu tēvi” ir kādas asku sēnītes (Claviceps) augļu ķermeņi* (T2, p. 170);

49 *rudzu vārpās bieži redzami „vilku zobi” jeb “rudzu tēvi” ir kāda asku sēnīte (Claviceps) (T3, p. 187; T4, p. 160); the term asku sēnes was also used (T4, p. 159).*

Further uses of *asku sēne* can be seen to illustrate inconsistencies: *aļģsēņu nodalījums; asku sēņu nodalījums* (Ilziņa et al., 1985, p. 109) (this later changed to *aļģseņu un askusēņu nodalījumi* (Ilziņa et al., 1995, 423)) but *askusēnes* (Ilziņa et al., 1985, p. 105, 411). The publication also featured these terms: *zaļaļģes, mieturaļģes*, and *sārtaļģes*, although *zeltainās aļģes* as an option of a compound was also available: ‘zeltāļģes’.

From the perspective of the potential to form a compound, specific considerations arise in association with the multi-word terms *suņu stobrs jeb suņu burkāns* (*Conium maculatum*) (T2, p. 201), which later became a compound: *suņstiebrī* (*Conium maculatum*) (T4, p. 200), although the same text also included the multi-word term *suņu smilga* (*Agrostis canina*), which is still used in botany. Other sources featured similar inconsistencies when the pattern was similar: *suņu roze* (*Rosa canina*) (Galenieks, 1950, p. 52) (in the case of all other similar patterns, a compound was used in the dictionary); *suņu roze* and *suņumirte* (Štrauhmane, 2008, p. 41, 20); *suņaķimene* (ZTV, 1922, p. 46). In a translation, a compound was used: *suņķimenes* (Wiebig, 1898, p. 407). Meanwhile, a brief inquiry indicated that periodicals feature *suņu ķimenes* (*Anthriscus sylvestris*) and there is just one instance of the singular genitive in *suņa ķimenes* (Skuju, 1921, p. 3).

We should note here that Ilsters’ text (1883) included compounds with the same structure, but a different singular or plural form of the modifier, compare: *suņanāve* (104) and *suņuburkani* (76), *suņu=vijole* (13) or *suņupetersilje* (T1, p. 104, 76, 13).

The issue of creating a consistent pattern was observed, for instance, in these units: *ūdenstvaiki* (T2, p. 87) and *ūdens tvaiki* (T2, p. 102); *ūdens kultūras* and *ūdenskultūras* (T4, p. 82); *augļu ķermeņi* (T2, p. 112; T4, p. 146) and *augļķermeņi* (T2, p. 170; T4, p. 100); *glotsēnes* (T2, p. 160; T4, p. 146) and *glotsulas* vs. *piena sulas* (T3, p. 70; T4, p. 58), although the pattern suggested a compound – ‘piensulas’. The compound form *piensulas* was also used in several specialized texts in the 1920s, and since then both forms have co-existed (see, for instance, *lacteal fluid – piensula* (Štrauhmane, 2008, p. 78)).

Interestingly, while Ilsters used the compounds *lapukoki* and *skujukoki* in 1883 (see above), Galenieks’ texts only included the word-group form: *skuju koki* (T3, p. 76; T4, p. 75), *lapu koki* (T2, p. 77; T4, p. 101). Moreover, Galenieks only uses *lapu meži* (T2, p. 202; T4, p. 226) and *skuju meži* (T2, p. 178; T4, p. 226), although the multi-word terms *lapukoku meži* has also been used since early 1900s at least. We should note that the word-group form was even preserved in triple-element terms, in which the necessity for a compound was apparent: *lapu koku suga* and *skuju koku suga* (ZTV, 1922, p. 67) (now, the correct uses are ‘lapkoki’ and ‘skujukoki’ (see Ilziņa et al., 1995, 293, 230)).

Galenieks also preferred the word-group for in the terms *vielu maiņa* (T4, p. 93) and *izejas materiāls* (T2, p. 125; T4, p. 111). The compound forms *vielmaiņa* and *izejmateriāls* were also used at that time (Miķelsons, 1923, p. 31; Zariņš, 1922, p. 137).

A special group of words was linked to the term *augis*, we observed varying choices as to the compound or word-group form: *putekšņu augi* (T2, p. 51); *paparžu augi* (T3, p. 83; *paparžaugi* (T3, p. 253); *sūnu augi* (T4, p. 170) (compare: *sūnaugi* (Ilziņa et al., 1995, p. 115); *pļavu augi* (T2, p. 189); *ziedaugi, sporaugi, lapoņaugi* (T2, p. 154); *[t]ā kā gundegu augiem ziedā ir daudz atsevišķu augļeniņu* (T2, 192); *[g]undegu augiem par nektarijiem pārveidojas putekšlapas* (T4, p. 38) – *gundegaugu iezīmes* (T2, p. 191; T4, p. 190); *medus augi* and *medusaugu ziedi* (T2, p. 51); *sīkaugi* (T2, p. 178).

Some singular genitive elements (this pattern was and is still not a typical case in this type of word groups (Kušķis, 1976, p. 126)) were replaced by plural: *ērgļa paparde* (T2, p. 180; T3, p. 204) – *ērgļu paparde* (Pteris aquilina) (T4, 177).

Specialised lexis and the terminological aspect

The terminology used in the main sources (botany text books) and additional sources of this study covers three of the five phases of the development of Latvian terminology (mid-19th century – 1918; 1918–1944; 1944–1990) as defined by Māris Baltiņš (2013, p. 418). This implies transitive, dynamic language facts, including changes to the terms used in botany.

The background describing the potential variability of specialised lexis, and even terms (for instance, *gada riņķi* (T2, p. 80) – *gada joslas* (T3, p. 80)) was implicitly illustrated by the comments relating to the practical procedures used when developing specialized lexis during the respective time period. Jēkabs Pīmanis explained that he had collected anatomy terms in multiple ways, including extraction from specialized literature, translation, *conversations* (our emphasis) with physicians and the creation of new words based on the recommendations of linguists (Pīmanis, 1925, p. 3; Pīmanis, 1931, p. 3). In 1883, Jānis Ilsters noted that he had also consulted lexicographic sources or used the words created by Atis Kronvalds; he also referred to words used by ordinary people or created new words (Ilsters, 1883, p. III)²⁴. Meanwhile, the communicative function of textbooks was also an important aspect – inclusion of synonyms and variants of plant names used in everyday communication (the issue of the synonymy of plant names was discussed, for instance, by Silga Sviķe (2013, pp. 96-101) was an option only available to these authors and not the botanists or linguists who compiled terminological glossaries or dictionaries. From the terminological perspective, an essential task was and remains defining a term while other words become secondary synonyms (for further details see Šulcs, 2003, p. 7).

In examining multiple instances Ilsters (1883) provided several names of the same plant:

- 50 *Jāņa paparde (ērgļapaparde)* (Pteris aquilina) (p. 94);
- 51 *melngalviņi (zaķavilna)* (p. 27);
- 52 *kreimene (zaķaustiņas, vēžaustiņas, vēžaukliņas)* (Convallaria majalis) (p. 27);
- 53 *meža=veronika (zemes=appinis, zemteka)* (Veronica chamaedrys) (p. 30) (however, Ilsters noted that the same words had also been assigned to other plants);
- 54 *tuhsku=veronika (plaušu=veronika)* (Veronica beccabunga) (p. 32);
- 55 *vīrcle (linuzāle, lauvurīklite²⁵)* (Linaria vulgaris) (p. 33);
- 56 *kotšu=kārklis (kurvju=kārklis)* (Salix viminalis) (p. 36);
- 57 *raibā dzegužpuķe (Joda rociņa, Dieva rociņa, Jāņa rociņa)* (Orchis maculate) (p. 44) (Galeņieks included an explanation: [d]zegužpuķēm sastopami apaļi un ķetnveidīgi gurni (“joda rociņa”) (T4, p. 17));
- 58 *meža=roze (lauka=roze, vilku=drīcekles)* (Rosa canina) (p. 47);
- 59 *saulespuķe (saulgrieze)* (Helianthus annuus) (p. 87);
- 60 *melnā paparde (kārpupaparde)* (Aspidium filix mas.) (p. 91);

²⁴ Ilsters is credited for the creation of words that were subsequently widely used in biology; including *suga, gundega, pienene, vizbulīte, magone, mežrozīte, rudzupuķe, purene, kaķpēdiņa, majjrozīte* (Latvijas Dabas muzejs, 2001: p. 11–13). See data about the names used for *rudzupuķe* and the respective origins in Leskauskaitė et al., 2012, p. 56–59.

²⁵ Later Ilsters accepted reviewer’s suggestion to use *lauvumute* (literally, ‘lion’s mouth’) instead of *lauvurīklite* (literally, ‘lion’s pharynx’). However, its modern form *lauvmutīte* shows that the initial diminutive has been retained *lavurīklite – lavmutīte*.

- 61 *saldā sakne (riemeņu=zāle)* (*Polypodium vulgare*) (p. 93) (we should note later changes, including a nomenclature change: *saldā sakne (Scorzonera hispanica)* (T2, p. 227); *melnsaknes (Scorzonera hispanica)* (Galenieks, 1950, p. 41);
- 62 *grīdas=piepa (švams)* (*Merulius*) (p. 101);
- 63 *atraitnīte (vārnu actiņas, bezdelīgu actiņas, trej'krāsu vijole, pamāte)* (*Viola tricolor*) (p. 9);
- 64 *gailene (sauc arī par gaiļubiksītēm, gaiļapaslavām, elknušiem, debess=atslēgu)* (*Primula officinalis*) (p. 6);
- 65 *melmeņuzāles (mugurkaulazāles)* (*Convallaria polygonatum*) (p. 28)
- 66 *Māras puķītes (spīdeles)* (*Bellis perennis*) (p. 50);
- 67 *paraztā asinszāle (raganukauli)* (*Hypericum perforatum*) (p. 67).

However, essentially terminological changes were also observed (see some illustrations in **Table 1**). Evidence that these observations illustrated a typical situation may also be obtained from other sources during the respective period; for instance: *zilkaulis* (*Isatis tinctoria*) (ZTV, 1922, p. 59) – *krāsu mēles* (*Isatis tinctoria*) (Galemiēks, 1950, p. 41) and *baltais mārābulis* (*Melilotus albus*) (ZTV, 1922, p. 53) – *baltais amoliņš* (Galenieks, 1950, p. 7).

The data in **Table 1** illustrate how some neologisms are accepted in the language (e.g., *spulgnaglēne*) while others are a short-time phenomenon (e.g. *plūris*). Another note should be made regarding the plural forms of plant names used in Galenieks' Dictionary – preferably, names of species should be indicated in their singular form.

Table 1. Changes in plant names used in the main source texts and in *Botaniskā vārdnīca* (*Botany Dictionary*; Galenieks, 1950)

T1	T2	T3	T4	Galenieks, 1950
<i>atraitnīte (vārnu actiņas, bezdelīgu actiņas, trej'krāsu vijole, pamāte)</i> (<i>Viola tricolor</i>) (p. 9)	<i>atraitnīte (Viola tricolor)</i> (223) (compare: <i>lauka atraitnīte, bārenīte, vijolīte (Viola tricolor)</i>) (ZTV, 1922, p. 47).	<i>atraitnīte</i>	<i>atraitnīte</i>	<i>atraitnītes (Viola tricolor)</i> (p. 9)
<i>āra=bērzs (Betula alba)</i> (p. 18)	<i>baltais bērzs</i> ²⁶ (<i>Betula verrucosa</i>) (p. 223)	<i>āra bērzs (Betula verrucosa)</i> (p. 312)	<i>āra bērzs</i> (p. 269)	<i>āra bērzs, kārpainais bērzs (Betula verrucosa, B. pendula)</i> (p. 11)
<i>juhmalas kviesis (Elymus)</i> (p. 66)	<i>jūrmalas kviesis (Elymus)</i> (p. 214) <i>jūrmalas kvieši (Elymus arenarius)</i> (p. 225)	<i>jūrmalas kviesis (Elymus)</i> (p. 245); <i>jūrmalas kviesis (Elymus arenarius)</i> (p. 255) <i>jūrmalas kvieši (p. 314)</i>	<i>jūrkviesis jeb jūrmalas kviesis (Elymus arenarius)</i> (p. 223) <i>index section: jūrkvieši (Elymus arenarius)</i> (p. 270)	<i>pamieži (Elymus)</i> (p. 76); <i>kāpu kvieši (skat. pamieži)</i> (p. 30) ²⁷
		<i>kāpu niedre (Ammophila arenaria)</i> (p. 255)	<i>kāpniedre (Ammophila arenaria)</i> (pp. 223–224)	<i>kāpu niedres (Ammophila arenaria)</i> (p. 30)

²⁶ See ancient lexis in (sub)dialects (toponym *Baršone* (currently *Bērzaune*) in Bredaks, 2007, p. 584.

²⁷ Other uses include: *smiltāja kāpukviesis* (*Leymus arenarius* (L.) (syn. *Elymus arenarius* L.)) (Latvijas Daba).

T1	T2	T3	T4	Galenieks, 1950
		<i>krustpiene (Senecio Jacobaea)</i> (p. 277)	<i>krustene (Senecio Jacobaea)</i> (p. 239)	<i>pļavas krustaines (Senecio Jacobaea)</i> (p. 34)
<i>lauktimijans jeb vecvīra=bārdziņa</i> (p. 25)	<i>lauku timijans jeb vecvīra bārdziņa</i> (p. 205); <i>timijans (Thymus)</i> (p. 228); <i>vecvīra bārdziņa (Thymus)</i> (p. 229)	<i>Māras sils (Thymus serpyllum)</i> (p. 275); <i>lielais Māras sils (Thymus chamaedrys)</i> (p. 277); <i>timijāns jeb Māras sils</i> (p. 235); <i>timijans (Thymus)</i> ; <i>vecvīra bārdziņa (Thymus)</i> (p. 318)	<i>lielie vecīši (Thymus chamaedrys)</i> (p. 239); <i>Māras sils (Thymus serpyllum)</i> (p. 275); <i>lielais Māras sils (Thymus chamaedrys)</i> (p. 277); <i>timiāns jeb Māras sils</i> (p. 205); <i>timiāns (Thymus)</i> (p. 271)	<i>mārsliili (Thymus)</i> ; <i>lielie mārsliili (Thymus chamaedrys)</i> (p. 40)
	<i>lunarijas</i> (p. 194)	<i>lunārijas</i> (p. 221); <i>mēnešvijole (Lunaria rediviva)</i> (p. 273)	<i>mēnesene (Lunaria rediviva)</i> (p. 236) ²⁸	<i>plūris (Lunaria)</i> (p. 49)
		<i>spārnainā cūktabaka (Scrophularia alata)</i> (p. 264)	<i>spārnainā cūknātre (Scrophularia alata)</i> (p. 229)	<i>spārnotās cūknātres (Scrophularia alata)</i> (p. 15)
	<i>darvaspuķes (Coronaria)</i> (p. 190); <i>darvas puķe (Coronaria flos cuculi)</i> (p. 224)	<i>darvas puķe; darvaspuķe (Coronaria flos cuculi)</i> (p. 214)	<i>darvas puķe</i> (p. 186) ²⁹	<i>spulgnaglenes, darvaspuķes (Lychnis)</i> (p. 59)
	<i>īve (Taxus bacata)</i> (p. 225)	<i>īve</i> (p. 209); <i>īve jeb platpaeglis (Taxus bacata)</i> (p. 17)	<i>īve</i> (p. 270)	<i>parastā īve (Taxus bacata)</i> (p. 28)
<i>krizdoles (ērķšķogās)</i> (p. 47)	<i>ērķšķogulājs (Ribes grossularia)</i> (p. 224)	<i>ērķšķoga</i> (p. 53)	<i>ērķšķogās (Ribes grossularia)</i> (p. 54)	<i>ērķšķogās (Ribes grossularia)</i> (p. 21)
<i>linūtēnis (Cuscuta)</i> (p. 53)	<i>āboliņa zīds (Cuscuta)</i> (p. 25)	<i>āboliņa zīds (Cuscuta)</i> (p. 26)	<i>āboliņa vija (Cuscuta)</i> (p. 19)	<i>vijas (Cuscuta)</i> (p. 65)
		<i>platkāji (Potentilla fruticose)</i> (p. 264)	<i>platkāji jeb čužas (Potentilla fruticose)</i> (p. 229)	<i>čužas (Potentilla fruticose)</i> (p. 107)
<i>rumpauši (lāčšapurni) (Morchella)</i> (p. 103)	<i>lāču purni</i> (p. 170); <i>lāčpurni (Morchella)</i> (p. 226)	<i>lāču purni</i> (p. 185); <i>lāčpurni</i> (p. 315)	<i>lāčpurni</i> (p. 159)	

²⁸ A brief inquiry into periodicals indicated the following uses: *mēneša puķe* (Smarods, 1910, p. 158); *mēnešvijole* (Rāceņa, 1927, p. 251); *mēnesene* (*Lunaria annua* L.) (it is explained that this is an ornamental plant in gardens) and *mēness vijolīte* (Strautzels, 1938, p. 188) (it is explained that this is a wild plant); *lunarijas jeb mēnešvijoles* (*Lunaria rediviva*) (Zālmans, 1939, p. 106).

²⁹ A brief inquiry into periodicals indicated that since the 1920s the word *spulgnaglens* has been used in most cases, although, in rare instances – *darvas puķe* (1934–1946); the compound *darvaspuķe* was used in a poem (Undere, 1937, p. 1) and later also in some publications in 1980s. The exile Latvian newspaper *Dzeive* (1948–1988) featured the following use: *zagižu spalvaudekli* (*Coronaria flos cuculi*) (Latkovskis, 1969, p. 21).

T1	T2	T3	T4	Galenieks, 1950
<i>sētložnis (uhdrenes, kustoņuzāle)</i> (p. 23)	<i>sētložnis (Glechoma hederacea)</i> (p. 228) (compare: <i>sētlodis, sētložnis</i> (ZTV, 1922, p. 48))	<i>sētložnis (Glechoma hederacea)</i> (p. 317)	<i>sētložņi (Glechoma hederacea)</i> (p. 271)	<i>sētložņi (Glechoma hederacea)</i> (p. 74)
		<i>tūkstošlapes (Myriophyllum)</i> (p. 282)	<i>tūkstošlapes (Myriophyllum)</i> (p. 243)	<i>daudzlapes (Myriophyllum)</i> (p. 16)
	<i>vasaras egle (Larix)</i> (p. 229)	<i>vasaras egle</i> (p. 210)	<i>lapegle jeb skuļmete (Larix)</i> (p. 182)	<i>lapegle, skuļmete (Larix)</i> (p. 89)
<i>vēršumēle (zila gužņa) (Anchusa officinalis)</i> (p. 40)	<i>vēršu mēle (Anchusa officinalis)</i> (p. 229) (compare: <i>vēršmēle, lauka samtene (Anchusa arvensis)</i> (ZTV, 1922, p. 46))	<i>vēršu mēle</i> (p. 318)	<i>vēršmēles</i> (p. 271)	<i>aptieku vēršmēles (Anchusa officinalis)</i> (p. 65)
	not included in the 1924 publication; <i>vilka pienenes (Euphorbia)</i> (1925, p. 283)	<i>vilka pienenes (Euphorbia)</i> (p. 319)	<i>dievkrēsliņš jeb vilka pienene (Euphorbia palustris)</i> (p. 226); <i>vilkpīnenes (Euphorbia)</i> (p. 271)	<i>dievkrēsliņi, eiforbijas (Euphorbia)</i> (p. 92); <i>purva dievkrēsliņi (Euphorbia palustris)</i> (p. 17) ³⁰
<i>vīnapuķīte (Majanthemum)</i> (p. 29)	<i>vīnapuķīte (Majanthemum bifolium)</i> (p. 229)	<i>vīnapuķīte (Majanthemum bifolium)</i> (p. 319)	<i>žagatiņas jeb vīnapuķītes (Majanthemum)</i> (p. 218); <i>žagatiņas (Majanthemum bifolium)</i> (p. 272)	<i>divlapu žagatiņas (Majanthemum bifolium)</i> (p. 70) (compare: <i>bifoliūs – divlapains</i> (p. 116))
	<i>vilku kūla (Nardus stricta)</i> (p. 229)	<i>vilku kūla (Nardus stricta)</i> (p. 263)	<i>vilku kūla (Nardus stricta)</i> (p. 228, 237), <i>vilkkūla</i> (p. 214)	<i>parastā vilkakūla (Nardus stricta)</i> (p. 66)

For some plants, the process of gradual changes to their names is particularly elaborate, especially when contextualised with other publications (see **Table 2**).

Some plant names changed their gender or their gender was unstable in the textbooks by Ilsters and Galenieks: *kokubārzdās* (Usnea) (T1, p. 100) – *kokbārži* (Usnea) (T2, p. 177); *taukusakne* (Symphytum) (T1, p. 43) – *taukusaknis* (Symphytum officinale) (T2, p. 228); *skābardis* (Carpinus betulus) (T2, p. 228) – *skābarde* (Carpinus betulus) (T4, p. 271) (compare: *parastais skābardis* (Carpinus betulus) (Galenieks, 1950, p. 56).

It is notable that, in specific cases, the names of plants may require additional inquiries into their origin or etymology to effectively understand their background. For instance, Ilsters explained that *starainā auza* was informally also called *šķestaines* due to its length (T1, p. 60). For the majority of modern Latvians this information afforded no hint as to the relationship between the name and length, and specific analysis was expected to be necessary to determine the following information: *šķērsts* ‘malkas šķīla, nūja’; *šķesta* or *šķeista* ‘tieva kārts, makšķeres kāts’ (Karulis, 1992, p. 390), thus, the name included an associative link with a narrow stick.

³⁰ Viesturs Šulcs noted that the new unfavourable practice of forming plant name doublets – Latvian variants of Latin names for genera – emerged in mid-20th century. Thus, the doublet *eiforbijas* along with the name *dievkrēsliņi* (Euphorbia) exemplifies this practice (Šulcs, 2003, p. 7).

Table 2. Changes in plant names

<i>pērkoņi</i> (T1, p. 27)	<i>perkone</i> (<i>Raphanus raphanistrum</i>) (T2, p. 227)	<i>pērkones jeb svēres</i> (Latviešu Avīžu Zemkopības pielikums, 1906, p. 36)	<i>lauku rutks</i> (<i>Raphanus raphanistrum L.</i>) (Tomsons, 1940, p. 166)		
<i>plav'eglītes</i> (<i>Pedicularis</i>) (T1, p. 80)	<i>purveglīte</i> (<i>Pedicularis palustris</i>) (T3, p. 317)	<i>parastās purva plaveglītes</i> (Zāmels, 1924, p. 399)	<i>plavu eglītes</i> (<i>jāņeglītes</i>) (<i>Pedicularis palustris</i>) (R. L., 1926, p. 128)	<i>jāņeglītes</i> (<i>Pedicularis</i>) (Galenieks, 1950, p. 93)	
<i>ņierbuļi</i> (<i>Melampyrum</i>) (T1, p. 43)	<i>ņērbuļi</i> (<i>Jāņu zāles</i>); <i>ņērbuļi</i> (<i>Melampyrum nemorosum</i>) (T2, p. 207, 226)	<i>nērbuļi</i> (<i>jāņuzāles</i>) (T3, p. 237; T4, p. 207)	<i>birztalu nārbuļi</i> (<i>jāņuzāles</i>) (<i>Melampyrum nemorosum</i>) (Galenieks, 1950, p. 83)	<i>zilgalvītes jeb nērbuļi</i> (<i>Melampyrum nemorosum</i>) (Senkeviča, 1983, p. 2)	<i>nārbuļi, zilgalvītes, kuodeilas</i> (<i>Melampyrum nemorosum</i>) (Grāvītis, 1985, p. 16)
<i>elšu zāle</i> (<i>Stratiotes aloides</i>) (T3, p. 283)	<i>elši</i> (T4, p. 243)	<i>ūdēnsšķēres</i> (H. E., 1918, p. 56)	<i>ūdēns usnes</i> (<i>Stratiotes aloides</i>) (Reiziņš, 1927, p. 170)	<i>ūdēns dadzis</i> (<i>Stratiotes aloides L.</i>) (Siliņš, 1932, p. 57)	
<i>piena dadži</i> ³¹ (<i>Sonchus</i>) (T2, p. 227)	<i>lauku mīkstpienes</i> (<i>Sonchus arvensis</i>) (Galenieks, 1950, p. 42)	<i>cuhku pienene</i> (<i>Sonchus Arvensis, Gānsedistel</i>) (Semits, 1873, p. 273)	<i>mīkstais piena dadzis</i> (<i>Sonchus Arvensis L.</i>) (Viļumsons, 1937, p. 212)	<i>mīkztā pienene</i> (<i>Sonchus Arvensis</i>) (Lūke, 1925, p. 38)	<i>garā cūkpiene</i> (<i>Sonchus Arvensis</i>) (B. Ž., 1927, p. 389)

Conclusion

The analysis provided serves as a kind of litmus test for the processes of linguistic stabilisation in the Latvian language, and for those features that remain variable and dynamic; first, due to commonly chaotic nature of the use and development of language, second, due to variations in what was regarded as the language standard at each specific phase of the linguistic embodiment of Latvian, and, third, due to the functional environment of botany as an area of academic investigation and everyday interest among people.

When comparing the 1883 text to the textbooks by Galenieks, we observed an apparent shift toward a more neutral tone and attitude. However, in some direct and implicit ways the reader continues to grasp a sense of personal involvement and commitment from Galenieks, which is also generally acknowledged to be a strong impetus for the engagement and interest of students.

Specific syntactic constructions, some of which have become obsolete and may now only be acceptable in the context of special stylistic needs, illustrate that syntax was an area where changes continued after the period covered by the main source texts used in this study.

The specialist lexis used in the textbooks indicates that, although a number of lexical and terminological changes, including specific nomenclature updates, were observed, these were to a great extent already well developed, and had begun to pass into the stabilisation phase. This was largely achieved by the continued efforts of experts in the field who engaged in linguistic endeavours to identify the most adequate lexical solutions. The

³¹ See the uses in Latgalian: *dažy* (for more details see Braidaks, 2007, p. 391).

results may, in the form of language facts, be observed in publications like the source texts for this paper, or in numerous periodical sources.

A specific feature of the dynamic changes in the Latvian language are associated with the variable pace at which particular new words were accepted by ordinary users and/or experts.

Meanwhile, the study provided evidence that a portion of the lexis has become obsolete to the extent that most users of Latvian would not include it in their everyday language usage, and are even unlikely to be able to recognise its meaning or background implications.

The study provides extensive evidence of the productive nature of the compounding technique when developing both the common names used in everyday language and specialised lexis. However, we support the findings of those investigations that suggest an unfavourable lack of consistency. Although during the period of late 19th century this particular trait could be justified by the generally unstable state of the Latvian language, inconsistencies in the mid-20th century suggested that this feature could remain as a permanent linguistic phenomenon.

An important feature of botany vocabulary is synonymy in the use specialised lexis. Although in some instances this implies vague variations and chaotic use or potential complications in the context of translation needs, it also represents linguistic abundance, i.e. favourable richness contributing to the vitality of the language, and an extensive base resource which may be used to further develop the Latvian language.

A specific practical suggestion for botany textbooks or any reference-type texts to be used is the inclusion of an Index section. Neither the 1883 textbook by Ilsters or the editions of Galeniēks' textbook featured this element, making it challenging to identify where all the instances where a unit of specialised lexis was discussed.

Recently, botany has attracted increased linguistic interest from both experts in the area and linguists themselves. However, a detailed insight into the development of the whole body of specialised lexis used in botany remains an essential future task, including similar studies about modern botany textbooks.

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Santrauka

Jānis Veckrācis

Lingvistinė latviškų botanikos vadovėlių (1880–1940) apžvalga: stabilūs ir kintantys bruožai

XIX amžiaus antroje pusėje ir XX amžiaus pirmaisiais dešimtmečiais tekstai, tarp jų ir botanikos vadovėliai, kurie nebuvo išversti ar adaptuoti iš vokiečių ar rusų kalbų, įkūnijo intensyvių latvių kalbos lingvistinės raidos etapą. Straipsnyje pateikiama įžvalga apie kalbinius ypatumus, būdingus dviem botanikos vadovėliams: Janio Ilsterio „Botanika liaudies mokykloms ir savišvietai“ („Botanika tautos skolām un pašmācībai“, 1883) ir Paulo Galenieko „Botanika“ („Botānika“) su pataisytais ir papildytais jų leidiniais (1924–1945). Tikslas – apibendrinti šiuose tekstuose pastebėtų stabilių ir kintamų morfologinių, sintaksinių ir ypač leksinių vienetų duomenis. Kalbos reiškiniai aptariami keliuose žodynuose ir leidiniuose atsižvelgiant į randamų lingvistinių faktų kontekstą. Remiantis surinktais duomenimis, nagrinėjamojo laikotarpio pabaigoje (XX amžiaus penktajame dešimtmetyje), pasibaigus itin sparčių ir įvairių kalbinių pokyčių laikotarpiui, latvių kalboje pastebėta santykinai tolygesnė raida su tam tikrais stabilizavimosi požymiais, kartu išlaikomas daugelio požymių kintamumas. Nors kai kurie pagrindiniuose šaltinio tekstuose esantys sintaksiniai ir leksiniai elementai pasikeitė arba paseno, vadovėliuose yra įrodymų, kad nagrinėjamojo laikotarpio pabaigoje tiek latvių kalboje apskritai, tiek botanikoje naudojama lingvistinė medžiaga iš esmės pasiekė visaverčio vystymosi etapą, kuris tuo pačiu skatino siekti stabilumo. Šiuo metu pastebima, kad tiek botanikai, tiek kalbininkai vis labiau domisi botanikos terminologija kaip kalbos sritimi, tačiau išsamūs duomenys apie visos botanikoje naudojamos specializuotos leksikos raidą – užduotis ateičiai. Tai taikytina ir panašioms lingvistiniams šiuolaikinių botanikos vadovėlių tekstų tyrimams.

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