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BACHELOR THESIS

AN ANALYSIS OF COMPOUND PLANT NAMES

Supervisor: Mgr. Petr Kos, Ph.D.
Author of thesis: Helena Šokčevićová
Study Program: Biology with a view to education – English Language and Literature
Year of study: 3

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Anotace

Bakalářská práce si klade za cíl provést podrobnou synchronní analýzu kompozitních pojmenování rostlin v angličtině. V její teoretické části se věnuje zejména shrnutí různých typu klasifikace kompozit na základě dostupné literatury, z nichž bude dále vybrána metoda vhodná pro vlastní analýzu. V praktické části pak porovnává četnost výskytu jednotlivých kategorií a zhodnocuje tendence výskytu těchto kategorií.
V závěrečné části se zabývá detailní analýzou kompozit typu Noun-Noun, u nichž posuzuje zejména významové vztahy mezi oběma složkami, které nejsou v kompozitech explicitně vyjádřeny.

Klíčová slova

slovotvorba; rostliny; klasifikace; složeniny; substantivní složeniny; význam

Abstract

The main objective of this bachelor thesis is to carry out the detailed synchronic analysis of compound plant names in English terminology. In the theoretical part it summarizes different approaches to the classification based on an available literature, from which the best approach to the applied analysis will be chosen. In the practical part it compares the frequency of occurrence of these categories and analyses the prevailing trends. In the final part a detailed analysis of noun-noun compound is provided, with the focus on the semantic relation between the two parts, which are not explicitly expressed in those compounds.

Key words

Word formation; plants; classification; compounds; compound nouns; meaning

Tables and Figures

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Introduction

Together with other languages, English tends to create new words by joining two or more already existing words in a process called compounding. When speaking about plant names, the majority of them consist of at least partial compounds, which are created mostly based on metaphorical, metonymical and other similar relationships. Due to the extensiveness of compound plant names it is meaningful to divide them into the subcategories based on various parameters and elaborate on the number of subjects in the created subcategories.

This area of analysis was determined to be the research question of my bachelor thesis, which aims to comment on the occurrence of compounds in selected categories and to explain the phenomena on the background of this field. The reason I am interested in this field of research is that it connects the topic of English linguistics and biology, which are both my majors on this university, and it gives me the chance to deepen my knowledge in both disciplines. In order to maintain the required objectives, the thesis is structured in two main parts – the theoretical part, which represents the theoretical basis of the examined process with the focus on the particular area of data occurring in the plant-names compounding; and the analytical part, which examines the acquired corpus.

This bachelor thesis will cover the basic principles of word-formation by compounding; the classification of compounds based on selected literature and within it the topic of orthography will be discussed as well.

The analysis itself will be based on the theoretical approaches described in the former part, which it would either confirm or refute, and in the conclusion the thesis should be able to comprehensively evaluate on and compare the prevailing tendencies in British plant terminology.

1. Theoretical part

In this part of my thesis the theoretical background of my research will be provided. I will describe the process of word formation focused on compounding as well as I will name the usual approaches to the classification of compounds with the emphasis on those categories, which are relevant when analyzing plant names.

1.1 Word-formation

Word-formation is the process in which a new word is created. According to *The Cambridge Grammar of the English Language* we can sort the words into two main categories: the "complex" and "simple" words[1]. While the simple words, such as *rose* and *tulip*, cannot be further divided from the morphological point of view, the complex words, such as *blueberry*, were obviously created by putting together smaller meaningful units called "morphemes"[2]. When looking at morphemes in detail, we find out that one group of morphemes appears on their own, while the second group of them can be found only together with other morphemes. The former are determined as "free morphemes", the latter are "bound morphemes", which attaches to the "root" of the word[3]. The "root, base or stem" of the word is the central meaningful unit of the word, which is more important than other morphemes[4].

Due to the permanent extension of every-day vocabulary, word-formation is a very vast and frequent process, which functions on a few different mechanisms of combining morphemes. The book *A Comprehensive Grammar of the English Language* lists four basic types of word formation:

1. "Prefixation,
2. Suffixation,
3. Conversion,
4. Compounding"[5]

[1] Bauer, Huddleston 2002, p. 1624
[2] Plag 2003, p.12
[3] Plag 2003, p. 13
[4] Plag 2003, p. 13
[5] Quirk et al. 1985, p. 1520

While the first two types use the strategy of adding a bound morpheme to the root and the third type serves only to change the class of the word without the change of the form, compounding is a process in which two or more bases are combined together resulting in a "grammatically" and "semantically" single word[6]. Considering the extensiveness of the word-formation topic, the entire length of my paper will be dealing only with the process of compounding, which will be discussed purely in terms of plant terminology and other related issues will be omitted.

1.2 Compounding

As we have already found out that compounding is a process, in which two (or more) free bases are connected together to form a new word, which meaning does not have to be able to be derived from the meaning of the individual parts, it is important to locate the process of composition in terms of word-formation processes. According to Lipka, composition can be classified as a way to creating "morpho-semantic" neologisms, which means that compounding is a process, which combines two morphemes with a notion to their semantic relationships, which are not in some cases obvious on a first glance (adopted from Tournier)[7]. This fact distinguishes compounding from the process of clipping, which creates neologisms purely based on the morphological alternation, as well as from "metasemantic processes" such as metaphor or metonymy, which operates only on a semantic level. The scheme of Tournier's classification is demonstrated below.

[6] Hladký, Růžička 1998, p.36
[7] Lipka 1990, p. 93

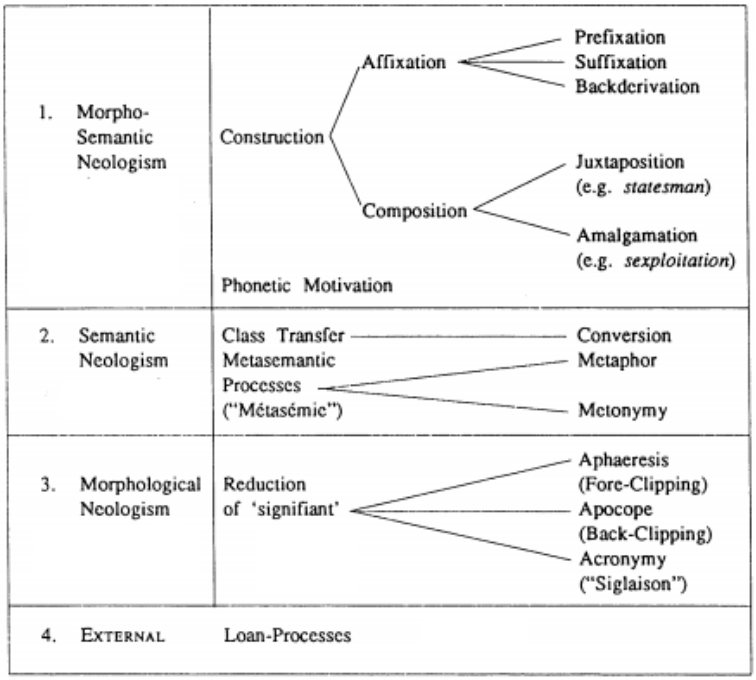

Figure 1: Tournier's classification of word-formation processes

1.3 Classification of Compounds

The present-day literature offers a wide range of approaches to classify compounds. While the major classification of compounds by the function they play in a sentence (nouns, verbs, adjectives etc.) is common to most of the linguists, the approaches to the sub classification vary significantly[8]. In this chapter my aim is to describe the three most common approaches for sub classification based on the selected literature, compare them and finally choose the best approach which will be used for my analysis.

1.3.1 Bauer's Approach

In order to avoid the controversy of sub classifying compound and to guarantee a valuability of his system in terms of the semantic relationship of compound's elements, Bauer introduced a method of sub classification based on the form classes of the individual elements of a compound[9]. It means that when classifying compounds, Bauer pays a particular attention to the function, which the individual elements play in a sentence. Even though this system also has a disadvantage represented by the degree of conversion in English language, which makes it hard to distinguish what form class

[8] Bauer 1983, p. 201
[9] Bauer 1983, p. 202

the particular element belongs to, as Bauer stated in his book, its clarity and particular emphasis on the semantic relationships prevailed the negatives and therefore caused it to be the most sufficient approach for the classification in this thesis.

The traditional categories of compounds Bauer subcategorized based on the form class of its head. Among these categories, he also defined a subdivision according to semantic criteria, i.e. *exocentric, endocentric, appositional* and *dvandva compounds*[10].

These two categorizations interact with each other, so that a *Silver Fir* is simultaneously endocentric and noun-centered compound noun. The brief scheme of Bauer's classification is provided below, nevertheless the description of the classes which do not occur in our corpora are reduced or omitted.

1.3.1.1 Semantic criteria

- **Exocentric compounds**

  Example: *Snapdragon*

  The property of this type of compound is that they are not hyponyms of their grammatical head, but rather of some unexpressed head based on the semantic connection. It is obvious regarding the example *Snapdragon*, which is not a type of a dragon (grammatical head) but a type of plant (semantic head).

- **Endocentric compounds**

  Example: *Silver Fir*

  Unlike the previous type of compounds, endocentric compounds are hyponyms of their grammatical head and the first part serves as the modifier, so that *Silver Fir* is a type of Fir.

[10] Bauer 1983, p. 33

- **Appositional compounds**

  Example: *Maidservant*

  These compounds are hyponyms of both of their parts; therefore they have two grammatical heads, as the *Maidservant* is a type of *Maid* as well as a type of *servant*. There has not been a single occurrence of this type of compounds among the plant names.

- **Dvandva compounds**

  Example: *Bittersweet*

  Dvandva compounds are those compounds, in which are not clear which of the two bases serves as a head and such compound is not a hyponym of either of them.

1.3.1.2 Syntactic criteria

- **Compound nouns**

  Compound nouns can be subdivided into noun-centered and verb-centered according to the form class of its head. While the compound as a whole takes over the class of its head element, all the verbs in verb-centered compounds are nominalised. The extra category of compound nouns is phrase compounds, which originated as a lexicalization of a syntactic structure. All the composites from Corpus 1 fall into the category of compound nouns.

- **Compound verbs**

  Compound verbs are again subdivided into noun-centered and verb-centered. Considering the absence of compound verbs in our corpus, the further description of them will be omitted.

- **Compound adjectives**

  These compounds have two main subclasses adjective-centered and noun-centered. All the composites from Corpus 2 fall into this category.

- **Phonologically motivated compounds**

  Phonologically motivated compounds are compounds which origin based on a phonetic motivation – either on a rhyme ("rhyme-motivated compounds") or on a vowel contrast ("ablaut-motivated compounds")[11]. The two bases do not necessarily have to carry an independent meaning, but they can be created purely in terms of a rhyme, as stated in Bauer and Huddleston[12].

Apart from the classes introduced above, Bauer lists two more categories, which do not occur in the examined corpora – Compound adverbs and other form classes, which contains the minor classes of compound words[13].

1.3.2 Quirk's Approach

Unlike Bauer's classification, Quirk in his book *A Comprehensive Grammar of the English Language* focused purely on the syntactic parameters when classifying compounds. As a result, he established a system, which sorts the compounds according to the syntactic relation between the individual elements, such as subject, verb, object, etc[14].

As compared with Bauer, two compounds may have a same structure and therefore fall in the same category for Bauer, nevertheless the relationship between components is different and Quirk classify them in two distinct categories[13]. The difference between Bauer's and Quirk's classification can be demonstrated with examples *Snowdrop* and *Cottonweed*. From Bauer's point of view, both bases of those plants are nouns and therefore they both belong to the category of Noun-Noun compounds. On the other hand Quirk distinguished the role of bases in the sentence and the compound *Snowdrop* for him belongs to the category "subject and complement" (*Snowdrop* is a drop of snow), whereas *Cottonweed* belongs to the category "subject and object" (*Cottonweed* is a weed which produces cotton)[15].

[11] Bauer 1983, p. 212-213
[12] Bauer and Huddleston 2002, p. 1666
[13] Bauer 1983, p. 212
[14] Bauer 1983, p. 1570-1574
[15] Quirk et al. 1985, p. 1573-1575

However detailed in terms of a syntactic analysis the system may be, due to the absence of semantic aspect it is insufficient for my research.

1.3.3 Marchand's Approach

Hans Marchand in his approach combined the syntactic and the semantic function of the compounds' elements, believing that compounds are based on the same relation as it is in a sentence and are in fact a reduced sentence, and he structures his classification syntactically[16]. His final sub classes are named by the model examples of each category, such as type *steamboat, watchmaker, color-blind* etc. and combine a synchronic as well as a diachronic point of view. Together with its untransparency, the diachronicity was a main reason for me not to choose this method for my analysis. As explained in the *Handbook of Word-formation*, Marchand's theory was extraordinary in his days; while all of the previous theories were purely diachronic, Marchand combined synchronic and diachronic approach[17]. Marchand emphasizes the importance of synchronic theory, while the history of patterns is less important and only additional, nevertheless he elaborates on productivity based on the historical development of this class.

[16] Marchand 1969, p. 31
[17] Stekauer and Lieber 2005, p. 100

2. Analytical Part

2.1 Creation of corpus

Before I could start the process of analysis itself, it was crucial to gather the corpus of interest. From the various number of online plant databases I chose the www.thewildflowersociety.com, which provided me with the most extensive while systematic list of British Plants possible. The widest range of input data was very important concerning the complexity and universal applicability of my thesis. The first thing, which was important to establish, was that concerning the plant names there are two types of places where a compound may occur – in their bases and in their attributes.

In order to bring results which will be beneficial and significant, I decided to treat these two types as separate categories and therefore I decided to create two individual corpora for analysis – the compound-base corpus and the compound-attribute corpus. Then I went through the database identifying the names, which were created by the process of compounding. For this purpose I applied the five-step rule called *a coordination and modification test*, invented by Huddleston, which is described in the chapter 2.1.1. The problem, which occurred immediately after sorting, was that while the compound is said to have only two elements, there were actually very common cases of compounds made up from more complex elements (such as *butterfly-bush*). My aim was to evaluate on the lexicalization of those complex bases and decide, whether or not to include them in my corpus. The result was that the majority of such "compound-within-compounds", as it is called in Warren, were incorporated in my research[18]. My observations correlate with Warren's opinion, that the most common type of such compounds is "left-branching", which means that the element on the left side is the more complex one[19].

From the acquired data, which consisted of 890 plant names and their modifiers we can assume that the majority of British Plant names are compound-like. The complete overview of the amount and structure of my corpora is in the chapter 2.2. The next step for me to do was to sort out those compounds, which are not relevant to my research, i.e. they are formed by blocked morphemes, loan words or are not suitable for

[18] Warren 1978, p.10
[19] Warren 1978, p. 11 - 12

synchronic analysis from etymological reasons etc. A brief overview of deleted categories will follow this chapter. The remaining list of names could be subsequently divided into the various subcategories based on preestablished Bauer-method parameters, which will be together with the elaboration on observed tendencies and results the main issue of the following analytical part of my thesis.

2.1.1 A coordination and modification test

While studying the corpus of plant names, which contained for example fifteen kinds of maples, I was made to question whether these plants are truly compounds or rather collocations. In order to identify the real compounds, I applied a coordination test introduced in Bauer and Huddleston[20].

[1] i *Silver Maple – Sugar Maple*

There are [both Silver and Sugar] Maples in the garden.

ii *Silver-fir – White-fir*

There are [both Silver-firs and White-firs] in the garden.

When the modifiers of such plants passed the test as in example i, we can assume that they are collocations, as opposite to example ii which examines a real compound. The parameter, which distinguishes the compound from a collocation, is that its component parts cannot enter separately into relationships of coordination and modification (Huddleston, 449). Due to the possible insufficiency of one test, Huddleston suggest four further approaches for the identification of compounds, which are stated below.

[2] i STRESS: the compound nouns carry a stress on the first element as the opposite to the collocation, which carry stress on the second element. This difference can be observed on the compound plant a *‘Spanish-dagger* and the collocation a *,sharp ‘dagger.*

[20] Huddleston 2002, p. 451

ii ORTHOGRAPHY: the proper compounds usually tend to be written as one word or are orthographically distinguished by hyphens, whereas a collocation consists of two words. This test however cannot be implied universally, because there are cases when a compound in written in its sequence-of-words form. This topic is covered in the chapter 2.3.2.1.

iii MEANING: the meaning of compound cannot be, unlike as the meaning of a collocation, derived from its components. Consider the plant *buttercup,* which cannot be described simply as a cup for butter, as it is for *teacup* etc. Still, there are some semantic connections between the name and the attributes of such plant, which are described in the chapter 2.3.3.

iv PRODUCTIVITY: the productivity of collocations exceeds the productivity of proper compounds. The modifier *sharp* in collocation *sharp dagger* can be easily substituted with many other adjectives, such as *blunt, silver, short* etc., whereas there is only one plant *Spanish dagger* and the usage of for example an *English-dagger* will totally change the original meaning of the compound.

By the application of a coordination and modification test I managed to narrow the length of examined corpora to their final extent, which is together with their structure demonstrated in the chapter 2.2.

2.1.2 Dismissed categories

In order to provide the meaningful results of synchronic analysis, the compounds should be analyzable from both "formally" and "semantically (Marchand 1969,2). Those compounds which do not successfully meet the conditions mention fall into the following categories.

2.1.2.1 Loan words

Examples: *Primrose, Pasqueflower, Herb-paris*

First category I decided to dismiss in my analysis was words, which at least partially adopted their name from a foreign language (most commonly French). It was important to distinguish those components from so-called neoclassical compounds, which are compounds that consist of roots of classical origin (Greek, Latin). Whereas the components of neoclassical compounds are transparent to most English native-speakers even if they do not originate in their mother tongue (as for example the modifier *bi-angular*), the loan-words are most people familiar with but with little awareness of their actual meaning (consider the examples below).

- ***Primrose*** – "late 14c., prymrose, from Old French primerose, primerole (12c.) and directly from Medieval Latin prima rosa, literally "first rose," so called because it blooms early in spring"[21].

- ***Pasqueflower*** – "late 16th century (as *passeflower*): from French *passe-fleur*. The change in spelling of the first word was due to association with archaic *pasque* 'Easter' (because of the plant's early flowering)"[22].

- ***Herb-paris*** – "Medieval Latin *herba paris*, literally probably herb of a pair (; from Classical Latin *herba*, herb + *paris*, genitive of *par*, a pair, in allusion to even number of flower parts): association with Paris by folk etymology"[23].

2.1.2.2 Blends

Examples: *Hawkbit*

According to Bauer and Huddleston (2002, 1636) blending is a process of word formation by a reduction of one or both bases at the boundary between them.

[21] etymonline.com, [online]
[22] oxforddictionaries.com, [online]
[23] yourdictionary.com, [online]

The example found in the corpus is a *Hawkbit*, which was created from the original bases *Hawkweed* and *Devil's bit*[24].

2.1.2.3 Seemingly analysable Compounds

Examples: *Bogbean, Boxwood, Witch-grass, Aunt-Eliza*

This category of excluded words was created for those compounds, which in most cases contain free morphemes and therefore meet the condition of morphological analysability, but in some way fail the ability to be synchronically analysed from their semantic perspective. It means that even though both morphemes can be analysed separately, the connection between them was established mostly by the alternation of the original morpheme. In order to understand the original meaning of the compound, the knowledge of etymology would be required. This necessity is important in order to avoid the unfounded conclusions, which may appear while analysing such compounds and is demonstrated on the examples below.

- ***Bogbean*** – an alternative form of *Buckbean*, "translation of Dutch *boksboon*, literally goat's bean"[25]. The association with a bog can be understand as a description of its habitat but is definitely secondary and it is not clear whether it was created by compounding or rather by shortening or blending.

- ***Boxwood*** – "*box* + *wood*, *box* from Latin *buxus* ("box-tree, object made of boxwood")"[26].

- ***Witch-grass*** – an alternative form of *Quitch-grass*, which points to the great vitality of this grass[27].

- ***Aunt-Eliza*** – a name created in folk etymology from no-longer existing name *Antholyza*[28].

[24] oxforddictionaries.com, [online]
[25] yourdictionary.com, [online]
[26] wictionary.com, [online]
[27] yourdictionary.com, [online]
[28] en.wikipedia.org, [online]

The special category of dismissed compounds is represented by the word *Cranberry*. This compound contains a morpheme *berry* as well as so called "blocked morpheme"[29] *cran-*, i.e. a morpheme which does not have any meaning, or which lost its meaning in a synchronic point of view, even though it is identifiable and modifies the meaning of a free morpheme (it distinguishes its head from *Blueberry* and *Strawberry*). Due to their features such as unproductiveness and inability to be analysed, blocked morphemes are of little interest in terms of our analysis, according to Marchand (1969, 2).

2.2 Size of Corpora

After the process of evaluation of compounds suitable for my research, two corpora were created, as described in chapter 2.1. The complete overview is shown in the table below.

The Size of Corpora	
Corpus 1 - Modifiers	280
Corpus 2 - Bases	610
Total	890

Figure 2: Size of corpora

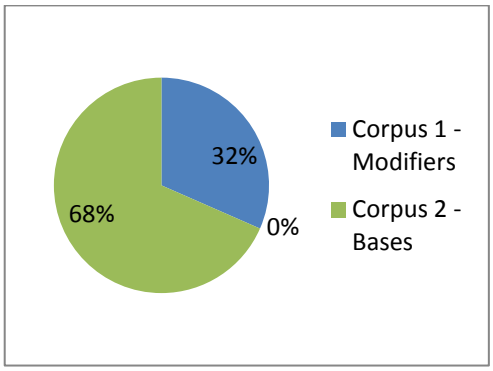

Table 1: Size of corpora

As it is obvious from the numbers above, the size of corpus one is significantly smaller, which points to the fact that the modifiers tend to be universal and repeat with different kinds of bases.

[29] Lipka 2002 , p. 87

2.3 Corpus Analysis

2.3.1 Corpus 1 – Modifiers

In this chapter my aim is to classify the compound modifiers according to the morphological criteria established in Bauer and Huddleston (2002) and Bauer (1983) with an addition of the semantic criteria within morphological categories. As all of the compounds serve as modifiers to the plant names, they are all classified as either compound adjectives or compound substantives in the position of modifiers. They can be divided into two main categories according to the class of their head - either adjective-centred or noun-centred. Due to a certain level of conversion between compound nouns and adjectives, an occurrence of classes which are not standard regarding compound modifiers was observed, i.e. *dephrasal compounds, ablaut-motivated compounds.*

2.3.1.1 Adjective-centred Compounds

Frequency: 216

All compounds whose head is formed by an adjective were included in this category. It is further subdivided by the nature of the first base – adjective, noun, adverb or verb. As we know, the compound usually accepts the class of its base, so that the majority of compound modifiers are adjective-centred (216 instances from total number 280).

- **Adjective + Adjective**

  Frequency: 121

  Examples: *Narrow-leaved, Small-flowered, Round-fruited*

  As these compounds usually specifies some feature of the plants' appearance, they are mostly endocentric. One example, which was tricky to classify but finally it was labelled adjective+ adjective and exocentric, was the modifier *Early-purple*. When looking at it from a closer perspective, we are able to see the ambiguity in terms of morphological as well as semantic structure. It is unclear whether the plant has some

colour but soon transforms into purple colour (and therefore would be adverb + adjective and endocentric), or whether it flowers early and at the same time is purple (adjective + adjective and appositional), which is the problem also described by Bauer[30]. After extra-linguistic investigation based on listed web sources, I found out that the second option is correct and the modifier therefore falls into this category. When looking at the compound adjectives from the closer perspective it is obvious that there are two types of adjectives in the position of head – primary adjectives and denominalised adjectives. However unexpected it may be, the latter significantly prevails among the examined corpus, as demonstrated below.

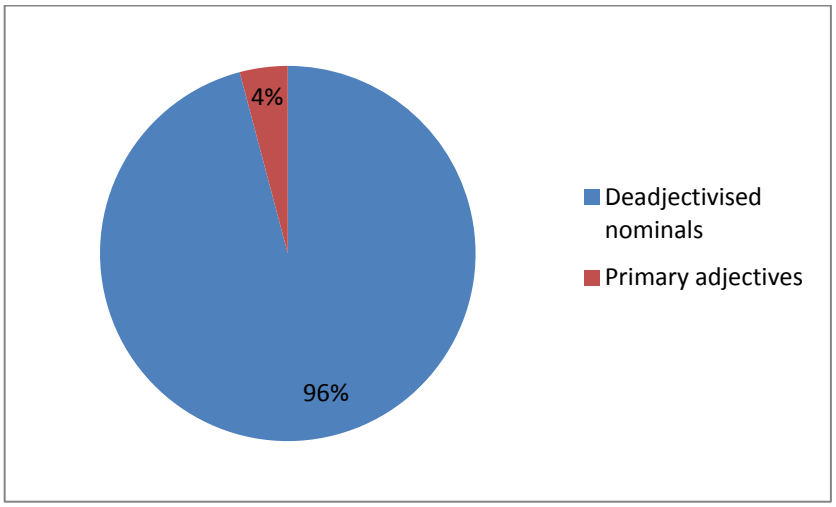

Figure 3: The ratio of Compound Modifiers

The productivity denominalised adjectives is very huge, which may be caused by the visual motivation when creating modifiers. While there are more nouns suitable when describing plant names than primary adjectives, the derivation of nouns with-ed becomes convenient.

- **Noun + Adjective**

Frequency: 91

Examples: *One-flowered, Willow-leaved, Lemon-scented*

For the same reason mentioned in the previous category, all of the compounds are

[30] Bauer 1983, p. 210

endocentric. According to Bauer, this type of compounds is the most frequent[31]; nevertheless this claim was not contributed in terms of my analysis, presumably due to the fact that it is more common to describe plant's appearance by adjectives than by the comparison with another plant.

- **Adverb + Adjective**

  Frequency: 1

  Examples: *Evergreen*

  In this category there is only one adjective, which have an adverb as the first element (*Evergreen*). Due to Bauer this type is not very common, which was confirmed by the results of my analysis[32].

- **Verb + Adjective**

  Frequency: 2

  Examples: *Cut-leaved, Livelong*

  The Verb + Adjective compounds are significantly rare and are possibly also new, as stated in *The English Word-formation*[33].

2.3.1.2 Noun-centred

Frequency: 60

In this second smaller category there are compounds whose head is formed by a noun. The first base may be a noun or an adjective. Considering the level of conversion in these compounds, they function not so much as adjectives but rather as a "three-term noun compound" as Bauer pointed out in his book, however due to their institutionalization and in many cases different meaning from its bases, there are dealt

[31] Bauer 1983, p. 209
[32] Bauer 1983, p. 210
[33] Bauer 1983, p. 209

as the real adjectives in my thesis[34].

- **Noun + Noun**

  Frequency: 31

  Examples: *Ashleaf, Pearl-fruit, Hawkweed*

  Concerning the Noun + Noun modifiers, there are two main types, which are treated as the separate categories here, namely the proper Noun + Noun compounds and the possessive Noun + Noun compounds (described below). In most cases, the modifier points to the connection with another plant, as obvious in the example *Hawkweed*.

- **Adjective + Noun**

  Frequency: 16

  Examples: *Silver-leaf, Blackseed, Purple-stem*

  According to Bauer, this combination is the most productive of all noun-centred compound adjectives[35]. In terms of plants' modifiers, this claim was not fully verified, due to the greater extent of plant names created by the connection of two noun bases. As it was mentioned earlier, the noun-centred modifiers often use the name of a different plant, so that these two phenomena are understandably connected.

- **Noun's + Noun**

  Frequency: 13

  Examples: *Hare's-ear, Snake's-head, Devil's-bit*

  The possessive form of the Noun + Noun compounds originated as it is significant for most of the noun-centred modifiers in the connection with another plant. The certain level of transition between nouns and adjectives can be observed and the

[34] Bauer 1983, p. 210
[35] Bauer 1983, p. 211

formal features of this type of compounds will be described in the chapter 2.3.2.2.

2.3.1.3 Dephrasal

Frequency: 3

Examples: *Hens-and-chickens, Head-to-head, Touch-me-not*

Dephrasal compounds are not usual for compound modifiers; the reason why they occur in my corpus is the conversion from dephrasal compound nouns. The compounds originated in the syntactic phrase. The majority of the dephrasal compounds in my corpus are exocentric.

2.3.1.4 Ablaut-motivated

Frequency: 1

Example: *Zigzag*

Another form, which is not typical for compound modifiers, is ablaut-motivated compounds. These compounds are in a way similar to rhyme-motivated compounds but they involve a vowel alternation[36]. The only example found is a modifier *zigzag*.

2.3.1.5 Verb-centred

Frequency: 1

Example: *Overlooked*

The last category of not so common compound modifiers are verb-centred compounds. The reason, why the verb base can serve as a modifier, is that the verb *look* is modified with the –ed suffix and therefore can function as adjective.

[36] Bauer 1983, p. 213

2.3.1.6 Summary of Compounding

Table 2 and figures 4, 5 describe the frequency and ration of compound modifiers.

Types of Compound Modifiers	
Adjective-centred Compounds	215
Adjective + Adjective	121
Noun + Adjective	91
Verb + Adjective	2
Adverb + Adjective	1
Noun-centred Compounds	60
Noun + Noun	31
Adjective + Noun	16
Noun's + Noun	13
Dephrasal Compounds	3
Ablaut-motivated	1
Verb-centred Compounds	1
Total	**280**

Table 2: Types of Compound Modifiers

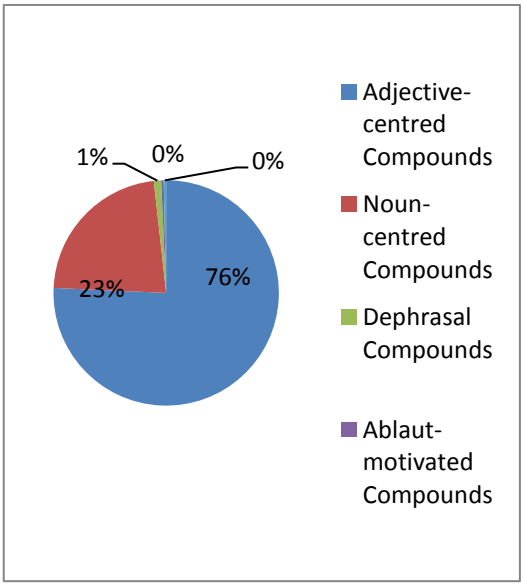

Figure 4: Types of Compound Modifiers

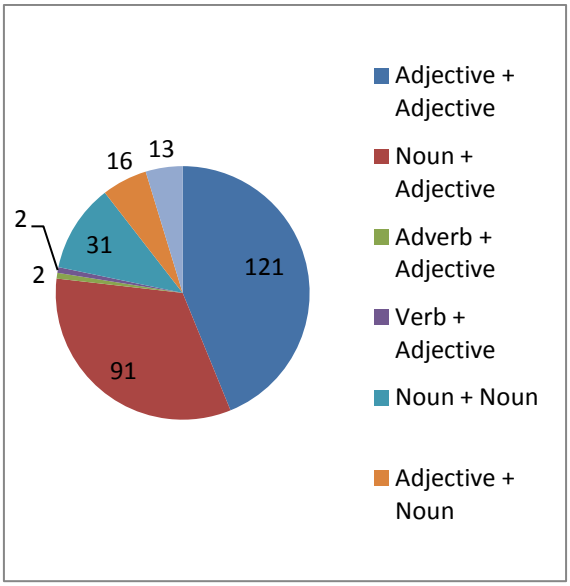

Figure 5: Subtypes of Compound Modifiers

As it was already mentioned earlier, the distribution of compounds ending in –ed prevails among the compound modifiers. The reason, why this phenomenon occurs, is their ability to better describe the plant than primary adjectives, because they can focus on more visual appearances than primary adjectives themselves. Those compounds could be in fact classified as secondary bahuvrihi compounds, they are also exocentric and the head is represented not by the whole plant but rather by its part. While the description of plant parts is more variable the final number of these modifiers is again bigger.

2.3.2 Corpus 2 – Bases

From the point of view of my research, the analysis of Corpus 2 is more important and valuable and therefore the analysis will be more extensive and will contain an evaluation on the semantic relationship between noun-noun bases as well.

According to Bauer's book *English Word-formation*, the compound nouns can be only noun-centred, verb-centred or particle-centred[37]. While there was no example of the last in the corpus 2, the former two categories were established as the root of my analysis concerning compound nouns. Nevertheless, a few compounds were not sufficient for any of the categories stated by Bauer (1983). Those compounds originated in the process of conversion from compound adjectives, however they function as nouns. Due to this finding it was necessary to create one extra category of compound nouns, which Bauer either did not discover or omitted (see 2.3.2.2.4). Together with the trends of synchronic compound classification I will also include a brief comment on the orthography of these compounds with the respect to the irregular patterns concerning this issue.

2.3.2.1 Orthography of Compounds

As it is obvious from the compounds we are dealing with in our corpora, their orthography seems very elusive and random. In many cases there are words, which can be found in different orthographic forms yet correct (e.g. rattle-snake-weed vs.

[37] Bauer 1983, p. 202-207

rattlesnake-weed). Even though there is no universally applicable rule, there are some basic patterns, which to some extent explain the usage of different orthographic models.

2.3.2.1.1 Sequence of words

The sequence of words is a form of compound, which contains the individual bases separated by breaks. According to Randolph Quirk et al., the sequence of words is the first stage when a compound is created from noun phrase and is in fact "unestablished"[38]. The only way how to distinguish the compound from the noun phrase in some cases is the stress mark, which is placed on the left-hand part of a compound, following the "compound stress rule", whereas in noun phrases it is placed on the last word of the phrase, which is called "nuclear stress rule"[12]. Nevertheless, there are cases especially concerning plant names when the compound remains in its sequence-of-words shape and does not transform in a single word. This is reasonable mainly for longer words, such as *Lily of the Valley*, in which this form guarantees their clarity (consider the **LilyoftheValey)*. The sequence of words, though, sometimes causes an ambiguity of utterance, which can be eliminated with hyphens, as described below.

2.3.2.1.2 Hyphenated words

A compound which is written in its hyphenated form consists of two or more bases joined with a hyphen, for example *forget-me-not*. According to *A Comprehensive Grammar of the English language*, the hyphenated form is used as an intermediate state between newly established compound written as a sequence of bases and settled compound written as a single word[39]. It contributes to the clarification of the sentence, which is demonstrated on the example below:

She is foreign-cuisine lover.

When this sentence would have been written in single-word pattern, there may easily

[38] Quirk et al. 1985, p. 1537
[39] Quirk et al. 1985, p. 1537

occur an ambiguity in meaning (whether foreign belongs to the subject or the object). In general there is also a tendency for British English to use the hyphenated forms of compounds more than in American English[40]. Besides, the hyphen is often used in exocentric compounds, where it illustrates the equality of both bases and in dephrasal compounds.

2.3.2.1.3 Single word

We can conclude from Quirk's description that once a compound is considered to be a fully-established part of everyday speech, it usually emerges as the single-word form[41]. This rule nevertheless does not apply to those words, in which the length restricts the connection, as described in chapter 1.3.1.Single-word orthography may or may not alternate the spelling following the particular phonological restrictions.

The appearance of various types of orthography of the same word may also correspond with the frequency of usage and therefore it varies among different locations. The areas, in which the plant is more common, would be more familiar with its hyphenated or single-word form than areas, in which the plant is relatively rare. Due to the randomness and variability of form used, the analysis of frequency of word-forms should not be considered universal and fixed.

The distribution of different orthographic principles is explained in the table below.

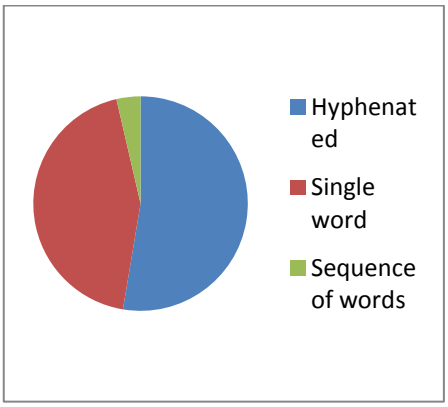

Figure 6: Orthography of compounds

The Ortography of Compounds	
Hyphenated	320
Single word	268
Sequence of words	22
Total	610

Table 3: Orthography of compounds

[40] Quirk et al. 1985, p. 1569
[41] Quirk et al. 1985, p. 1537

As we see from the acquired data, the ratio of the three principles does not meet the presupposition established in Quirk, as explained above. As I have already mentioned the length restriction, which resulted in compounds written as separate words, the number of hyphenated compounds exceeded the number of single words, which were thought to be the most common. The reason for this phenomenon may be that those plants are not as often used in language and therefore there is not such need for their consistency and they underwent a lower level of lexicalization. As I mentioned before, many plants could be found in various orthographic forms so that the numbers cannot be universally analysed and result in valuable outcome.

2.3.2.2 Compound Bases - Analysis

2.3.2.2.1 Noun-centred

Frequency: 548

The major category of compound nouns is formed by those compounds, which have a noun as the head. The first element may be a noun, an adjective, or a verb. Concerning the Noun + Noun type there are two varieties considered to be two separate categories – the Proper Noun + Noun compounds and the possessive form.

- **Noun + Noun**

  Frequency: 364

  Examples: *Pondweed, Roseroot, Buckeye*

  These types of compounds are formed by two nouns and are either endocentric (*Pondweed*) or bahuvrihi. The head the latter compounds contain only a part of the plant and the relationship between bases is exocentric (consider *Roseroot*). A great variety of semantic relationships could be found within this category and the elaboration of those relationships is provided in the chapter 2.3.3. One example in this category, which was not very clear at the beginning and it seemed to belong rather in the verb-centred category, is the compound *Bean-caper*. After the research on the etymology of this compound I discovered that the head *Caper* was

created by the process back-formation of the earlier form *Capers* and belongs therefore to noun-centred compounds[42].

- **Adjective + Noun**

  Frequency: 91

  Examples: *Blueberry, Fat-hen, Broadleaf*

  While it is sometimes hard to distinguish between this type of compound and a collocation, Bauer recommends to apply the stress test described in the chapter 2.1.1. As he also points out in his book the range of adjectives occurring in this compound is limited and mostly monosyllabic and German origin[43], nevertheless there are a few exceptions such as *Obedient-plant*, which is not monosyllabic and was loaned from French[44]. In my corpus the number of monosyllabic adjectives is 65, which contributes to Bauer's opinion.

- **Noun's + Noun**

  Frequency: 66

  Examples: *Baby's-breath, Lamb's-tail, Devil's-claw*

  The category of possessive Noun-Noun compounds described in Bauer and Huddleston (2002) was further developed by Benczes. According to her research there are two main motivations for this form of compounds (i.e. "purpose" and "possesion"[38]), there were only the examples of the latter discovered in my corpus. The possessive form of compound plants originated mostly in metaphoric and metonymic relationships, as it is significant for the majority of Noun+ Noun compounds. Almost all of these compounds are written with hyphens, which points to their lexicalization. They are mostly exocentric as described on the example *Baby's-breath* which is not a type of breath but rather a type of plant.

[42] merriam-webster.com, [online]
[43] Bauer 1983, p. 206
[44] dictionary.com, [online]

- **Verb + Noun**

  Frequency: 27

  Examples: *Bleeding-heart, Snapdragon, Sneezeweed*

  These compounds originated in Gerund + Noun and is therefore possible to classify them into the Noun + Noun category due to the nominal features of gerund, as explained by Bauer[45]. The examples, which tend to show similar semantic relationships to Noun + Noun compounds, are those which ended with *–ing* such as the *Bleeding-heart* (total number 4) and are all endocentric, whereas the rest can be subdivided according to the head being the object of the verb or not[46].The latter was observed to be more common in my corpus.

2.3.2.2.2 Verb-centred

Frequency: 5

Examples: *Selfheal, Honeysuckle, Everlasting*

Even though these compounds have a verb as their head, the verb underwent a process of derivation in many cases, so that the suffixes as *–ing* were added[47]. Those bases can subsequently function as nouns even though they originated in verb forms.

2.3.2.2.3 Dephrasal

Frequency: 54

Examples: *Forget-me-not, Lily of the Valley, Snow-in-the-summer*

Dephrasal compounds are compounds which originated in the lexicalization of syntactic structure. They may or may not include a noun element in their name and therefore the plural forms of such compounds differ (as in *Forget-me-not**s**, Lili**es** of the Valley*). They have a tendency to be written in hyphenated forms, nevertheless there are a few separate-word forms as the *Lily of the Valley*). The majority of this type of compounds

[45] Bauer 1983, p. 203
[46] Bauer 1983, p. 204-205
[47] Huddleston and Bauer 2002, p. 1652

in my corpus is exocentric, which corresponds to the Bauer's claim that the exocentric type is far more productive[48].

2.1.2.2.4 Conversion

Examples: *Eyebright, Bittersweet, Wintergreen*

In this final category of I included compounds, which does not occur in Bauer's methodology, nevertheless occur in my corpus. They are represented by compounds, which function as nouns but were converted from adjectives. Even though these words can be modified with various affixes, all of the compounds in my corpus underwent the change of syntactic class without the change of form[49]. The only way how to recognize them as nouns rather than adjectives was that they were themselves modified in our corpus, such as *One-flowered Wintergreen*.

2.1.2.2.5 Summary of Analysis - Base

The distribution of types of Compound Bases is described in the figures 7, 8 and tables 4, 5.

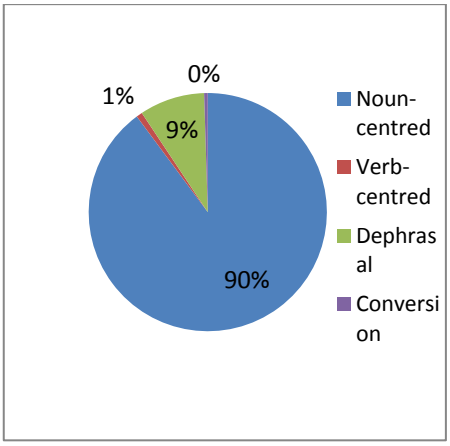

Figure 7: Types of Compound Bases

Types of Compound Bases	
Noun-centred	548
Verb-centred	5
Dephrasal	54
Conversion	3
Total	610

Table 4: Types of Compound Bases

[48] Bauer 1983, p. 207
[49] Bauer and Huddleston 2002, p. 1640

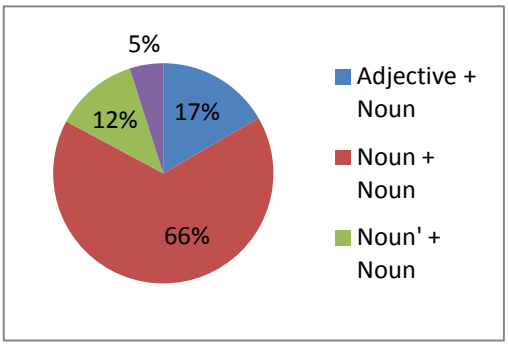

Figure 8: Types of Noun-centred Compounds

Types of Noun-centred Compound Nouns	
Noun + Noun	364
Adjective + Noun	91
Noun's + Noun	66
Verb + Noun	27
Total	548

Table 5: Types of Noun-centred Compounds

As is it obvious from data above, the Noun-centred compounds prevails among compound bases. In the category of Noun-centred compounds the Noun-Noun combination exceeds the number of other compounds. Noun-Noun combinations could be found either in their possessive of normal form. Compound bases, especially Noun-Noun combinations, are set up based on the semantic shift, as further examined below.

2.3.3 Semantic shift

The last part of my thesis will focus on the semantic shift occurring in Noun + Noun Compounds. As Benczes (1984) noted in her book, the semantic relationships, which are indeed very diverse, could be found between the two components as well as between the individual elements and the whole compound[50]. As there a great scale of semantic relationships between bases, I adopted the approach of Benczes who distinguishes the metaphor and metonymy[51], which are further subcategorized according to the extension of semantic shift, i.e. whether it is represented by the complex word as a whole or rather by only one of the bases. When analyzing the Noun + Noun corpus I found out that the total number of 463 plant names were motivated by semantic shift. Due to the great number of overlapping between categories, which will be also dealt with in this chapter, it was sometimes hard to distinguish, in which category the particular compound will belong to, and therefore the cases were sorted into the categories, which from my point of view suited it the most, nevertheless are debatable and subjective. Some of these cases are discussed at the end of this chapter.

[50] Benczes 1984, p. 2
[51] Benczes 1984, p. 3

2.3.3.1 Metaphor

Frequency: 281

Metaphor is a type of semantic shift based on the similarity between two concepts. As I follow Benczes' approach, the treatment of metaphor in this thesis is considered from the conceptual point of view. The conceptual metaphor is a process first examined by Lakoff and Johnson (1980). It is characterised by the process of mapping, which represents the correspondences between source and target domain. The former is a domain from, which the metaphorical expressions are created, while the latter is the domain, which we are trying to understand. This can be demonstrated with the example *Cat's-ear,* in which the *cat's ear* (part of body) is mapped onto *Cat's-ear* (plant).

Concerning the practical part, I focused on Benczes' type of classification itself. There are two types of metaphor distinguished: a complete metaphor, in which the whole name of the plant is metaphoric and a partial metaphor, in which only one of bases or the relation between them is metaphorical.

The semantic shift by metaphor was the most common among examined plant names; more than a half of my corpus was created by either partial or complete metaphor

- **Complete metaphor**

  Frequency: 106

  Examples: *Parrot's-feather, Baby's-breath, Beggarticks*

  In this category there are compounds, which are represented by metaphor of the whole concept. As it was already explained before, metaphor is based on the similarity, in terms of appearance (*Parrot's-feather*), scent (*Baby's-breath*), behaviour (*Beggarticks*), etc., nevertheless the visual similarity significantly prevails.

- **Partial metaphor**

  Frequency: 175

  Examples: *Sword-fern, Grass-cushion, Wing nut*

We speak about partial metaphor, when the compound is not metaphorically single concept as a whole, i.e. that only one base of the compound is metaphorical or the relationship between bases is metaphorical (*Wing nut*). The example of metaphorical-based first base is a *Sword-fern*, where *sword* modifies the appearance of the *fern*. Metaphorical-based second base could be seen on *Grass-cushion*, where *cushion* describes the appearance of a *grass*.

2.3.3.2 Metonymy

Frequency: 182

Metonymical relationship is based on the contiguity between concepts (geographical places, illnesses, time, effects of such plants, etc.). These relationships were harder to distinguish and required a certain extra-linguistic research. The category of metonymy is further subdivided into complete and partial metonymy, following the same pattern as already explained with metaphor.

- **Complete metonymy**

  Frequency: 53

  Examples: *Beebalm, Fleabane, Traveller's-joy*

  Compounds in this category function as a metonymy in terms of a whole. It mostly describes the time and place of occurrence (*Traveller's-joy* is located along waysides) or the manner of behaviour (*Fleabane* was thought to ward off fleas, *Beebalm* is a substance in the plant which attracts bees), etc.

- **Partial metonymy**

  Frequency: 129

  Partial metonymy is a metonymy, which either shifts only the first base or

operates between the two bases of a compound (these two concepts merge one into another). The principle of partial metonymy is demonstrated on the examples below.

- ***Cuckooflower*** – the time of flowering correlates with the time when cuckoos sing.

- ***Milkwort*** – this plant was used medicinally in order to improve the lactation of women[52].

2.3.3.3 Overlapping cases

As it was already mentioned earlier, there is a great number of overlapping cases, which are hard or even impossible to sort out in a clear-cut way. On the examples below I will demonstrate the instances of overlapping among individual categories.

- ***Harebell*** – a very interesting case, which could be classified as metonymy due to its habitat, may also be classified as a metaphor thanks to the *bell*-shaped flowers[53].

- ***Lungwort*** – in this plant name there are both metaphor and metonymy present, because its leaves look like a lung tissue and it was formerly believed to cure lung diseases, nevertheless the metaphorical part is thought to be established subsequently and therefore it is likely to be classified as metonymy[54].

- ***Sunflower*** – it is not sure whether the name of this plant originated in its ability to rotate its flowers to the sun, or rather in the appearance of those flowers.

- ***Nightshade*** – even though the colour of its berries may have given the name to this

[52] yourdictionary.com, [online]
[53] oxforddictionaries.com, [online]
[54] oxforddictionaries.com, [online]

plant, their poisonous properties often resulting in death can serve as a source, from which the name is derived[55].

2.3.3.4 Summary of Semantic shift

The table 4 and figure 7 show the distribution of semantic shift among plant names.

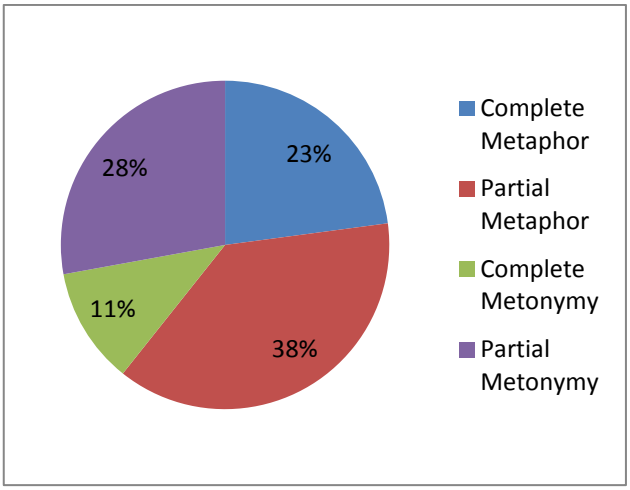

Figure 9: The distribution of the Semantic shift

Distribution of the semantic shift	
Metaphor	281
Complete	106
Partial	175
Metonymy	182
Complete	53
Partial	129
Total	463

Table 6: The distribution of the Semantic shift

As we see the most common motivation for the semantic shift is a metaphor (total 281). Even more common than complete metaphor and metonymies are the combinations of one shifted and one non-shifted base.

[55] etymonline.com, [online]

3. Conclusion

Compounding is a very common word-formation process especially when creating plant names. The position of compound in plant names resulted in the creation of two corpora, one deals with compound modifiers consisted, and the other one with compound bases, the total number of compound analysed in this thesis is 890 plant names. The aim of my thesis was to perform a synchronic analysis of those compounds focused on the morphological structure based on Bauer's approach with a few improvements adopted from other linguists. The semantic aspect nevertheless was discussed as well with the respect to the morphological categories.

The corpus of compound modifiers, which consisted of 280 plants, was represented by compounds, which were sorted according to the form class of their head; the majority of compound modifiers are adjective-centred (namely 215) whereas the noun-centred modifiers were represented by only 60 plants. This ratio absolutely confirms the presupposition established by Bauer. Due to the level of conversion between nouns and adjectives there were three more categories occurring, the dephrasal compounds (3 plants), ablaut-motivated compounds (1) and verb-centred compounds (1), which again represents a minority of compound modifiers.

The corpus of compound bases consisted of 610 plants and was represented by compounds nouns. According to Bauer they were subsequently sorted into noun-centred, which prevails (548) and verb-centred, which were represented by 5 plants. The category of dephrasal compounds was incorporated as well, and consisted of 54 plants. The smallest category of 3 compounds was represented by modifiers originated in conversion.

Within the noun-centred compound nouns the Noun + Noun combination exceeds all of the other categories with the total amount of 364 plants, the second most common was Adjective + Noun type with 91 plants. I decided to distinguish the possessive form of Noun + Noun compounds (66), which was inspired by Warren analysis. The Verb + Noun type represents the minority of compound nouns with 27 plants. The ratio of individual subcategories correlates with Bauer presupposition.

Concerning the orthography of compound bases my numbers differ from Quirk's elaboration on compounds; while Quirk assumed that the majority of compounds is in their single word form mainly due to their lexicalization, regarding plant names the hyphenated form prevails (320) and the single word form (268) is only significantly more common than sequence of words (22). The reason why my analysis does not follow Quirk's point of view is the length restriction of compounds as well as the variety in occurrence of a great number of those plants. While the orthography of compounds differs among individual areas as well as among individual sources, those numbers should not be considered universally applicable.

The semantic shift analysed in noun-noun compounds is represented by two main categories – metaphor and metonymy. The first type, which is based on the similarity between concepts and was most common in my corpus; from the 463 semantically shifted plants more than a half (281) names were motivated by metaphor. Metonymy, which is based on the contiguity of concepts, was represented by 182 plants. These two main categories were further subdivided according to the extent of semantic shift: complete, which means that the compound was shifted as the whole concept and partial, which describes the shift of only one base or the interaction between bases on a semantic level. The overlapping between individual categories is demonstrated on a few examples.

Sources

For the creation of corpus the List of all British Plants from 2010 was used, available on the website of The Wild Flower Society.

http://thewildflowersociety.com/wfs_list_of_all_plants/main_menu_2010.htm [accessed 15. 1. 2015]

The online databases consulted for the etymology of compounds are the following:

- Wiktionary – http://en.wiktionary.org
- Memidex – http://www.memidex.com
- Oxford Dictionaries – http://www.oxforddictionaries.com
- Your Dictionary – http://www.yourdictionary.com
- Wikipedia – http://en.wikipedia.org
- Merriam-Webster – http://www.merriam-webster.com
- Online Etymology Dictionary – http://www.etymonline.com
- Dictionary – http://dictionary.reference.com

Bibliography

Bauer, Laurie. *English Word-formation*. Cambridge: Cambridge University Press. 1983 Print.

Bauer, L. and R. Huddleston. 2002. "Lexical word-formation". In: Huddleston, R. and G. K. Pullum (eds.), *The Cambridge grammar of the English language.* Cambridge: Cambridge University Press. 1621-1721. Print.

Benczes, Réka. 2006. Creative Compounding in English: The Semantics of *Metaphorical and Metonymical Noun–Noun Combinations.* Amsterdam & Philadelphia: John Benjamins. Print.

Bloomfield, Leonard. *Language*. Chicago: University of Chicago Press, 2005. Print.

Hladký, Josef a Růžička, Milan. A Functional Onomatology of English. Brno: Masarykova univerzita, 1996. Print.

Lakoff, G., Johnson, M. *Metaphors We Live By.* Chicago: University of Chicago Press, 1980. Print.

Lipka, Leonhard. *An outline of English Lexicology.* Tübingen: Niemeyer, 1990. Print.

Marchand, Hans. *The Categories and Types of Present-Day English Word-Formation: A Synchronic-Diachronic Approach*. München: Beck, 1969. Print.

Plag, Ingo. *Word-formation in English*. Cambridge: Cambridge University Press, 2003. Print.

Štekauer, P. And Lieber, R. *Handbook of Word-formation*. Dordrecht: Springer, 2005. Print.

Quirk, Randolph, et al. *A Comprehensive Grammar of the English Language.* London: Longman, 1985. Print.

Warren, Beatrice. *Semantic Patterns of Noun-Noun Compounds*. Göteborg: Acta Universitatis Gothoburgensis, 1978. Print.

Appendix: The corpus

Compound Modifiers

Aconite-leaved, Adder's-tongue-, Alchemilla-leaved, Almond-leaved, Alternate-leaved, Anise-scented, Ashleaf-, Balm-leaved, Bedstraw-, Bicoloured-, Bird's-eye, Bird's-foot, Bird's-nest-, Black-eyed, Blackseed-, Blue-stem, Blunt-flowered, Blunt-leaved, Bottlebrush-, Box-leaved, Bright-leaved, Bristly-fruited, Broad-fruited, Broad-leaved, Buck's-horn-, Bunchflowered-, Celery-leaved, Circular-leaved, Clasping-leaved, Close-headed, Cockscomb-, Copper-wire-, Coralroot-, Corky-fruited, Cornfield-, Crisp-leaved, Crooked-stem, Cross-leaved, Curly-cup-, Curved-leaved, Cut-leaved, Cyclamen-flowered, Daisy-leaved, Dark-leaved, Dark-red, Deltoid-leaved, Dense-flowered, Devil's-bit-, Dove's-foot-, Downy-fruited, Early-purple-, Eight-stamened, Elm-leaved, Entire-leaved, Equal-leaved, Evergreen–, Fat-spiked, Fern-leaved, Few-flovered, Fig-leaved, Fine-leaved, Fireweed-, Five-leaf, Five-seed-, Five-spined, Flat-fruited, Flat-stalked, Foothill-, Four-leaved, Foxtail-, Fuchsia-flowered, Golden-scaled, Goldilocks–, Grass-leaved, Grass-wrack-, Green-flowered, Green-leaved, Green-ribbed, Green-winged, Grey-budded, Grey-leaved, Hairy-fruited, Hairy-pitted, Halberd-leaved, Hare's-ear-, Hare's-foot, Hawkweed-, Hay-scented, Head-to-head, Heart-leaf, Heart-leaved, Hens-and-chickens-, Hollow-stemmed, Holly-leaved, Horseshoe-, Hyssop-leaved, Chamomile-leaved, Chestnut-leaved, Chickory-leaved, Chickweed-, Ivy-leaved, Keeled-fruited, Knotroot-, Lance-leaved, Large-flowered, Large-fruited, Large-headed, Large-leaved, Large-sepalled, Laurel-leaved, Lax-flowered, Leafy-fruited, Lemon-scented, Limestone-, Linear-leaved, Livelong-, Lodgepole-, Long-beaked, Long-bracted, Long-flowered, Long-leaved, Long-stalked, Loose-flowered, Love-restoring, Mallow-leaved, Mangrove-leaved, Many-flowered, Many-leaved, Many-seeded, Many-stalked, Mapple-leaved, Mat-grass-, Medium-flowered, Mint-leaved, Narrow-fruit, Narrow-fruited, Narrow-leaved, Narrow-lipped, Necklace-, Needle-leaved, Net-leaved, Nettle-leaved, Night-flowering, Night-scented, Oak-leaved, Oblong-leaved, Obovate-leaved, Oil-seed-,One-flowered, One-glumed, One-stoned, Open-fruited, Opposite-leaved, Orange-peel-, Overlooked, Oxeye-, Oxtongue-, Painted-leaf, Pale-flowered, Pale-leaved, Palmate-leaved, Paper-white, Parnassus-leaved, Peach-leaved, Pearl-fruit, Peppermint-scented, Pheasant's-eye-, Pinewood-, Pink-headed, Plantain-leaved, Plum-leaved, Purpleberry-, Purple-flowered, Purple-stem, Rat's-tail-, Red-berried, Red-leaved, Red-stalk-, Red-tipped-, Ribbon-leaved, Ribwort-, Rough-fruited, Rough-leaved, Rough-stemmed, Round-fruited, Round-headed, Round-leaved, Round-seeded, Rush-leaved, Sage-leaved, Saltmarsh, Saltmeadow-, Saw-leaved, Seaside-, Sharp-flowered, Sharp-leaved, Sharp-stipulated-, Sharp-toothed, Shiny-leaved, Short-felted, Short-fruited, Short-leaved, Short-styled, Short-tepalled, Sickle-fruit, Sickle-leaved, Silky-leaved, Silver-bush-, Silver-leaf, Silver-spiked, Silvery-leaved, Six-rowed, Six-stamened, Slender-leaved, Slimleaf-, Small-flowered, Small-fruited, Small-headed, Small-leaved, Small-white-, Smooth-stalked, Snake's-head-, Snowdrop-, Soft-leaved, Spear-leaved, Spoon-leaved, Spotted-stalked, Square-stalked, Square-stemmed, Squirrel's-foot-, Squirreltail–, Star-flowered, Star-fruited, Star-shaped, Stiff-leaved, Strong-spined, Sword-leaved, Tansey-leaved, Tea-leaved, Ten-leaved, Ternate-leaved, Thick-leaved, Thin-leaved, Thin-spiked, Thread-leaved, Three-cornered, Three-flowered, Three-leaved, Three-lobed, Three-nerved, Three-

toothed, Thyme-leaved, Tiger-tail, Toadflax-leaved, Touch-me-not-, Triangular-, Tricolour-, Twin-headed, Twin-leaved, Twisted-leaf, Two-coloured, Two-flowered, Two-leaved, Two-rowed, Two-spined, Urn-fruited, Various-leaved, Wallflower–, Watercress-leaved, White-flowered, White-stemmed, Whitish-leaved, Whortle-leaved, Willow-leaved, Woad-leaved, Woody-rooted, Yellow-flowered, Yellow-juiced, Yellow-rayed, Zigzag-

Compound Bases

Abraham-Isaac-Jacob, Adam's-needle, Adder's-tongue, Allseed, Alpenrose, Angel's-tears, Angel's-trumpets, Angelica-tree, Apple of Sodom, Apple-mint, Apple-of-Peru, Arrowgrass, Arrowhead, Artillery-plant, Asthma-plant, Awlwort, Baby's breath, Baby's-blue-eyes, Balm-of-Gilead, Balsam-poplar, Baneberry, Barker's Hebe,Barrenwort, Bayberry, Beadplant, Bean-caper, Bearberry, Beard-grass, Beauty-bush, Bedstraw, Beebalm, Beeplant, Beggarticks, Bellflower, Bells-of-Ireland, Bindweed, Bindweed, Bird's-eyes, Bird's-foot, Bird's-nest, Bird-in-a-bush, Birthwort, Bitter-orange, Bittersweet, Black-bindweed, Black-bryony, Black-eyed-Susan, Black-grass, Black-jack , Black-poplar, Blackthorn, Blackwood, Bladdernut, Bladderseed, Bladder-senna, Bladderwort, Blanketflower, Bleeding-heart, Blood-drop-emlets, Bluebeard, Bluebell, Blueberry, Blue-curls, Blue-eyed-grass, Blue-eyed-Mary, Blue-sow-thistle, Blue-thimble-flower, Bog-laurel, Bow-flower, Bridal-spray, Bridewort, Bristle-fern, Broadleaf, Brooklime, Brookweed, Broom-rape, Broomweed, Buck's-beard, Buckeye, Buckthorn, Buffalo-bur, Buffalo-grass, Bugle-lily, Bugseed, Bullwort, Burdocks, Bur-grass, Burweed, Butcher's-broom, Butter-and-eggs, Butterbur, Buttercup, Butterfly-bush, Buttonweed, Cabbage-palm, Camphorweed, Canary-creeper, Canary-grass, Cape-jewels, Carpet-grass, Cast-iron-plant, Castor-oil-plant, Cat's-ear, Cat's-tail, Caterpillar-plant, Catchfly, Cat-mint, Centuryplant, Cloudberry, Clubmoss, Cock's-eggs, Cock's-foot, Cocklebur, Cockroach-berry, Cockspur, Cockspurthorn, Colt's-foot, Coneflower, Copse-bindweed, Coralbells, Coralberry, Coral-necklace, Coralroot, Cord-grass, Corncockle, Cornflower, Cornsalad, Costmary, Cottongrass, Cottonweed, Cowbane, Cowberry, Cowherb, Cow-wheat, Crack-willow, Crane's-bill, Cream-cups, Crimson-glory-vine, Crosswort, Crowberry, Crowfoot, Crownbeard, Crumbweed, Cuckooflower, Cucumber-tree, Cudweed, Culver's-root, Cup-grass, Cup-plant, Cut-grass, Daisy-bush, Dame's-violet, Dead-nettle, Deergrass, Devil's-backbone, Devil's-claw, Devil's-fig, Dewberry, Dewplant, Dog's-tail, Dog-rose, Dogwood, Dove-tree, Dragon's-teeth, Dragon-head, Dropseed, Dropwort, Duck-potato, Duckweed, Dumb-cane, Dysentery-herb, Eelgrass, Elephant-ears, Evening-primrose, Everlasting, Everlastingflower, Everlasting-pea, Eyebright, Fairy's-thimble, False Lupine, False-acacia, False-buck's-beard, False-helleborine, Fat-hen, Fennel-flower, Fetter-bush, Fiddleneck, Field-speedwell, Figwort, Finger-grass, Firethorn, Fireweed, Fish-guts, Fish-plant, Fishweed, Fivespot, Flatsedge, Fleabane, Fleawort, Foamflower, Forget-me-not, Fountain-bamboo, Fox-and-cubs, Foxglove, Foxtail, Fringecups, Frogbit, Frogfruit, Fuzzweed, Glasswort, Globeflower, Globe-thistle, Glory-of-the-snow, Goat's-beard, Golden-bell, Golden-knee, Goldenrod, Goldfields, Goldilocks, Gold-of-pleasure, Good-king-Henry, Gooseberry, Goosefoot, Goosegrass, Grapefruit, Grape-hyacinth, Grape-vine, Grass-cushion, Grass-of-Parnassus, Greenweed, Ground-cherry, Gumplant,

Gumweed, Hair-grass, Hard-grass, Hardhack, Hare's-ear, Hare's-tail, Harebell, Harlequinflower, Hart's-tongue, Hartwort, Hawk's-beard, Hedge-parsley,Hemp-nettle, Henbane, Herb Robert, Hobble-bush, Hogweed, Hollowroot, Holly-fern, Honewort, Honeybells, Honeysuckle, Honeywort, Hooker's Hebe, Horn-of-plenty, Hornwort, Horse-chestnut, Horse-nettle, Horsetail, Hound's-tongue, House-leek, Chaff-flower, Chaffweed, Chain Fern, Checkerberry, Cherry-pie, Chickweed, Chinese-hauses, Chinese-lantern, Chokeberry, Iceplant, Indian-shot, Indian-weed, Inch-plant, Inkweed, Ironwort, Jacob's-ladder, Japanese-lantern, Jelly-beans, Job's-tears, Jo-jo-weed, Joyweed, Juneberry, Kaffir Lily, Kangaroo-apple, Kidneyweed, Kindling Bark, King-of-the-Alps, Knotgrass, Knotweed, Labrador-tea, Lace-shrub, Lady's-bedstraw, Lady's-mantle, Lady's-slipper, Lady's-tresses, Lady-fern, Lamb's Succory, Lamb's-ear, Lamb's-tail, Large Garden, Larkspur, Lavender-cotton, Leopard's-bane, Leopardplant, Lewis's Hebe, Lily of the Valley, Lily-of-the-valley-tree, Limestone, Little-Robin, Liverleaf, Londonpride, London-rocket, Longberry, Longleaf, Lords-and-Ladies, Lousewort, Love-grass, Love-in-a-mist, Love-lies-bleeding, Lungwort, Madwort, Maidenhair-fern, Maidenhair-tree, Mallow-wort, Mare's-tail, Marigold, Marsh-elder, Marshwort, Marvel-of-Peru, Mask-flower, Masterwort, Mat-grass, May Lily, May-apple, Mayweed, Meadow-foam, Meadow-grass, Meadowsweet, Michaelmas-daisy, Milkwort, Mind-your-own-business, Mintweed, Mitrewort, Mock-orange, Moneywort, Monk's-hood, Monkeyflower, Monkey-puzzle, Moonwort, Morning-glory, Motherwort, Mountain-laurel, Mouse-ear, Mouse-ear-hawkweed, Mousetail, Mousetailplant, Mudwort, Mung-bean, Musk-mallow, Nailwort, Navelwort, Needle-grass, Nightshade, Ninebark, Nipplewort, Nit-tassel, Nut-heads, Nutsedge, Oat-grass, Obedient-plant, Oceanspray, Oniongrass, Orange-ball-tree, Oregon-grape, Owl-clover, Oxeye, Oxtongue, Oysterplant, Painted –lady, Painted-tongue, Painter-nettle, Parrot's-feather, Parrot-leaf, Passionflower, Peanut, Pearlwort, Pellitory-of-the-wall, Penny-cress, Pennywort, Pepperbush, Peppermint, Pepperwort, Pheasant's eye, Pheasant's-tail, Pick-a-back-plant, Pickerelweed, Pigmyweed, Pignut, Pigweed, Pillwort, Pincushion-flower, Pineappleweed, Pinkweed, Pipewort, Pitcherplant, Pokeweed, Pondweed, Popcorn-flower, Pride-of-India, Prince's-feather, Prophet-flower, Purple-heart, Quaking-grass, Queen-of-the-prairie, Quillwort, Rabbit-meat, Ragged-Robin, Ragweed, Ragwort, Raspberry, Raspwort, Rattlesnake-grass, Rattlesnake-weed, Red-cedar, Red-hot-poker, Red-maids, Red-ribbons, Redshank, Redwood, Redwood-ivy, Restharrow, Robin's-plantain, Rock-rose, Rosebay, Rose-moss, Rose-of-heaven, Rose-of-Sharon, Roseroot, Rupturewort, Rustyback, Sally-me-handsome, Salmonberry, Saltbush, Saltwort, Sandbur, Sandwort, Saw-wort, Scaly-buttons, Scurvygrass, Sea Rocket, Sea-blite, Sea-lavender, Selfheal, Service-tree, Sheep's-bit, Sheep's-bur, Sheep's-fescue, Sheep-laurel, Shepherd's Cress, Shepherd's-needle, Shepherd's-purse, Shield-fern, Shoreweed, Sicklepod, Signal-grass, Silk-tassel, Silver-berry, Silverling, Silverweed, Skeletonweed, Skullcap, Skunkweed, Slipperwort, Small-reed, Smearwort, Smoke-tree, Snake's-head, Snake-bark-maple, Snapdragon, Sneezeweed, Sneezewort, Snowberry, Snowdrop, Snowflake, Snow-in-the-summer, Soapwort, Soft-rush, Soft-grass, Solomon's-seal, Southerwood, Sowbread, Spanish-dagger, Spanish-needles, Spatter-dock, Spearwort, Speedwell, Spider-flower, Spiderplant, Spiderwort, Spike-rush, Spikeweed, Spiny-bur, Spleenwort, Springbeauty, Squirrel-corn, St John's-wort, St Paul's-wort, Starfruit, Star-of-Bethelem, Startflower, Star-thistle, Starwort, Steeple-bush, Stickleaf, Stickseed, Stink-grass, Stitchwort, Stone Bramble, Stonecrop, Stork's-bill, Strapwort, Strawberry, Strawberry-raspberry, Strawberry-tree, Strawflower, Sundew, Sundrops,

Sunflower, Sunray, Swallow-wort, Sweet-briar, Sweet-flag, Sweet-grass, Sweet-potato, Sweet-sultan, Sweet-William, Sword-fern, Tapegrass, Tarweed, Tassel-flower, Tasselweed, Tear-thumb, Tea-tree, Thimbleberry, Thorn-apple, Throatwort, Tickseed, Tick-trefoil, Toadflax, Toothpick-plant, Toothwort, Traveller's-joy, Treasureflower, Tree-of-heaven, Trumpet-creeper, Trumpet-leaf, Tulip-tree, Tunicflower, Twinflower, Velvetleaf, Venus's-looking-glass, Vetchling, Viper's-grass, Virgin's-bower, Virginia-creeper, Wallflower, Wall-rue, Wandering-jew, Water-cress, Water-crowfoot, Water-dropwort, Water-lily, Water-milfoil, Water-parnsip, Water-pepper, Water-plantain, Water-shield, Water-soldier, Water-speedwell, Waterweed, Waterwort, Wayfaring-tree, Weasel's-snout, Whitebeam, White-cedar, White-elm, Whitlowgrass, Whorl-flower, Wildrice, Willowherb, Wineberry, Wing nut, Wintergreen, Winter-cherries, Wireplant, Wolf's-bane, Wood-sorrel, Woolly-heads, Wormwort, Woundwort, Yard-grass, Yellow-buttons, Yellow-eyed-grass, Yellow-ratte, Yorkshire-fog, Youth-and-age.