Odessa National Medical University

Department of General and Clinical Pharmacology and Pharmacognosy

methodological developments
workshops
for full-time students

Discipline: "Resursovedenie medicinal plants"
Lesson number 4 "The raw material base of medicinal plants in Ukraine. LR various kinds of plant communities (forests, onions, grasslands, marshes, etc.). The influence of anthropogenic load on the populations of the species - source LSR "

Course 3 Faculty medico-pharmaceutical

approved by
in the methodical meeting of the
Department
August 28, 2025
Protocol № 1
Head. Department of

_____ prof.Rozhkovsky YV

Odessa 2025

1. Theme 4: The raw material base of medicinal plants in Ukraine. LR various kinds of plant communities (forests, onions, grasslands, marshes, etc.). The influence of anthropogenic load on the populations of the species - the RL sources

2. Relevance of the topic. The raw material base of medicinal plants in Ukraine. LR various kinds of plant communities (forests, onions, grasslands, marshes, etc.). The influence of anthropogenic load on the populations of the species - the RL sources

3. The purpose of the activity:
-vyyasnit patterns plant relationship in populations of medicinal plants and to form an idea about the vulnerability of HR resources with clear cenotic confinement due to the action of anthropogenic factors.

3.1. Learning Objectives:

-know (The level of assimilation of Bespal'ko -II):
-Standard method of detecting specific composition phytocenosis (tsenokompleksov HR)
-asortiment kinds of HR with a clear cenotic confinement;
-See anthropogenic load and its influence on coenopopulations Certain HR.
- to be able (Mastering level -III):
- to carry out geo-botanical description tcenopopuljatcij LR;
- provide the main basis for the name of the Association with the participation of the Republic of Lithuania;
-otsenivat possible character of anthropogenic load influence on the state tcenopopuljatcij LR.

3.2. Educational goals:
-sposobstvovat formation of ecological outlook and liability for future pharmacists the use of natural resources, the RL.

4. Interdisciplinary integration:

number pp	**discipline**	**Know**	**be able to**
one.	**previous** Medical botany	Phase of development, the environmental conditions of growth of medicinal plants;	To assess the current conditions of growth of specific types of LR

2.	pharmacognosy	The effect of various factors on the contents of the main storage and a bar RL	Choosing optimum blank areas and periods native RL
3.	Intra integration (the topic of this discipline, which integrates that which is studied) ...	Resursovedenie as science and academic discipline. The raw material base of medicinal plants in Ukraine. The use of herbal medicines in the Republic of Lithuania and the modern world medical practice. Accounting for medicinal plant resources, the principles of their management and protection. Cultivation of Latvia in Ukraine and the world.	develop: on the harvesting instructions, drying and storage of raw wild higher plants, algae, lichens and fungi, newsletters; make reports for doctors and advise the public on matters related to the harvesting and use of raw materials and products of natural origin.

5. The content of lessons

The theoretical material topics outlined in the text of the lecture number 1, and the following sources of information:

1. Heinrich M., Barnes J., Prieto-Garcia J., Gibbons S., Williamson E. M. Fundamentals of Pharmacognosy and Phytotherapy. 3rd ed. Elsevier, 2023. 282 p.
2. Medicinal Plant Resources : textbook / V. M. Minarchenko et al. Kyiv : Palyvoda A. V., 2019. 128 p.
3. Bioprospecting of Ethnomedicinal Plant Resources: Sustainable Utilization and Restoration / ed. by G. Shukla et al. CRC Press, 2024. 466 p.
4. Medicinal Plants: Bioprospecting and Pharmacognosy / ed. by A. B. Sharangi, K. V. Peter. Apple Academic Press, 2022. 602 p.
5. Van Wyk B. E., Wink M. Medicinal Plants of the World. 2nd ed. CABI, 2017.

6. Materials for methodological support classes

6.1. control materials for the preparatory phase of exercises

Test questions:

1. Give a definition of the concept of "overgrown"
2. In what ways can grow herbs? Give examples.

3. What is the relationship between an SC method of reproduction with the dissemination of the character as part of phytocenosis?
4. Name the factors known to affect the wild plants and phytocoenosis.
5. How can manifest human impact on phytocoenosis and coenopopulations?
6. What forms of life oak forest plants.
7. What are the life forms steppe plants.

tests:

1. Which of the LR contained in the list is a plant-cosmopolitan:
A. Astragalus sherstistotsvetkovy
B. Baikal skullcap
V. Hillman
Mr. St. John's wort
D. Adonis spring

2. It is known that St. John's wort - a herbaceous perennial rhizome plant shortly. it will soon spread to the big forest clearing:
A. Quite often;
B. absently;
B. Single;
, A small group, spots;
D. In view of the meadows is not found.

3. Select the plant communities in which to find more productive coenopopulations calamus ordinary:
A. ruderal,
B. Wood
B. meadow marsh
G. Suholuchni
J. Steppe

4. Select a plant grouping in which to find more productive coenopopulations lily of the valley:
A. ruderal
B. Wood
B. meadow marsh
G. Suholuchni
J. Steppe

5. Herbal drug Salvini used as an astringent, anti-inflammatory and antimicrobial agent. The source for this tool are:
A. Grass of Leonurus
B. Herb horsetail
B. Grass horsetail
G. Letter of peppermint

D. sage leaf drug

6. Phytopreparation "Aromelin" P exhibits vitamin activity. With the plant raw material is obtained preparation "Aromelin"
A. Hawthorn
B. ashberries
B. Fruits of chokeberry Aronia
G. Fruit Viburnum
D. fruits of elderberry

7. The vegetable preparation "plantaglyutsid" is used as a reparative agent for peptic ulcer. Vegetable raw material for its manufacture is
A. The leaves of bearberry
B. The leaves of Plantago major
B. The leaves of Digitalis
G. leaves lily of the valley
D. herb leaves

8. Herbal preparations "Korglikon" is used as a cardiotonic agent in diseases of the cardiovascular system. Vegetable raw material for its production is
A. The leaves are gray zheltushnik
B. The leaves of Digitalis purpurea
B. Leaves lily of the valley
G. Eucalyptus leaves
D. stramonium leaves

9. rutin exhibits vitamin P activity. For industrial production of such routine use RL:
A. Herba Polygoni avicularis;
B. Fructus Hippophaes rhamnoides;
B. Flores Helichrysi arenarii;
G. Herba Bidentis tripartitae;
D. Fructus Sophorae Japonica.

10. Pharmaceutical company produces tannin from vegetable raw materials. plant species can be used as a source of tannin:
A. Folium Rhus coriariae
B. Cortex Quercus roburis
B. Rhizoma Bergeniae crassifoliae
G. Herba Hyperici perforati
D. Radix Sanquisorbae officinalis

11. Name phytocoenosis natural, a part of which is the dominant pine European, in the undergrowth - single red elderberry bushes, and grass cover observed scattered growth Hypericum perforatum, mountaineer pochechuynogo and some "spots" Veronica drug:

A Pine Forest
B. Pine-wood pith-mammal
B. Pine forests motley
G. Mixed forest
D. Herb-mixed forest.

6.2. The information necessary for the formation of knowledge, skills can be found in textbooks:
6. Basic literature

7. Фармакогностичне ресурсознавство з основами інтродукції лікарських рослин / Навчальний посібник. – Полтава: ПДМУ, 2021.
8. Державна Фармакопея України : в 3 т. / ДП «Український науковий фармакопейний центр якості лікарських засобів». 2-е вид. Харків : Науковий фармакопейний центр, 2015. Т. 1. 1128 с.
9. Ресурсознавство лікарських рослин: Практикум / Тржецинський С. Д. та ін. – Запоріжжя: ЗДМУ, 2021.
10. Фармакогнозія: підручник для студентів фармацевтичних факультетів / Посилкіна О. В. та ін. – Харків: НФаУ, 2015–2018 (розділи, присвячені сировинній базі).
11. Тржецинський С. Д., Доля В. С., Денисенко О. М. Ресурсознавство лікарських рослин : навч.-метод. посіб. Запоріжжя : ЗДМУ, 2015. 115 с.
12. Грицик А. Р., Водославський В. М., Мельник М. В. Фармакогнозія. Ресурсознавство лікарських рослин : навч. посіб. Івано-Франківськ : ПП Голіней О. М., 2019. 248 с.
13. Зузук Б. М. Ресурсознавство лікарських рослин : навч. посіб. для студ. вищ. фармац. навч. закл. Вінниця : Нова Книга, 2015. 232 с.
14. Heinrich M., Barnes J., Prieto-Garcia J., Gibbons S., Williamson E. M. Fundamentals of Pharmacognosy and Phytotherapy. 3rd ed. Elsevier, 2023. 282 p.
15. Medicinal Plant Resources : textbook / V. M. Minarchenko et al. Kyiv : Palyvoda A. V., 2019. 128 p.
16. Bioprospecting of Ethnomedicinal Plant Resources: Sustainable Utilization and Restoration / ed. by G. Shukla et al. CRC Press, 2024. 466 p.
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18. Van Wyk B. E., Wink M. Medicinal Plants of the World. 2nd ed. CABI, 2017.

Additional literature:

19. Лікарські рослини: Рекомендаційний список літератури (актуальні видання 2024 року) / Уманський НУС.
20. Малопоширені ароматичні види лікарських рослин / Наукове видання. – Берегове: ЗУІ ім. Ф. Ракоці ІІ, 2025.
21. Лабораторний журнал з ресурсознавства лікарських рослин : [посібник] / В. М. Мінарченко та ін. Київ : Паливода А. В., 2018. 94 с.

22. Фармакогнозія : підручник для студ. вищ. навч. закл. / В. С. Кисличенко та ін. ; за ред. В. С. Кисличенко. Харків : НФаУ : Золоті сторінки, 2015. 736 с.
23. Державна Фармакопея України : в 3 т. / ДП «Український науковий фармакопейний центр якості лікарських засобів». 2-е вид. Харків : Науковий фармакопейний центр, 2015. Т. 1. 1128 с.
520 p.

electronic resources

24. Medicinal Plant Names Services (MPNS) Resource. Kew Royal Botanic Gardens. URL: kew.org (дата звернення: 22.03.2026).
25. Ресурсознавство лікарських рослин : презентація лекції. Нац. фармац. ун-т. URL: https://cnc.nuph.edu.ua/wp-content/uploads/2023/09/prezentatsiia_resursoznavstvo-lr.pdf (дата звернення: 22.03.2026).

6.3. Indicative map for independent work with literature

conclude their own dictionary of terms with recommended educational, scientific and reference literature (concepts) necessary for mastering topics (fill in the table 1)

Table 1

Search, identification and description of commercial arrays and HR resources

notion	definition
Species composition phytocenosis	
Definitions industrial array locations,	
extrapolation	
key section	
The method of accounting HR resources on key areas	
The method of complete enumeration HR resources	
The accounting treatment for HR resources	
area descriptions	
industrial array	
synusia	

coenopopulations	

7. Materials for self-control of quality of training

Questions for self-control:

1.Oharakterizovat patterns and differences between populations LR formation of different life forms.
2. What is synusia?
3. Characterize Phytocenological Attachment 5 common types of medicinal plants.
4. What are the medicinal plants that have affinity to forest communities: oak? Pine and mixed?
5. Where usually harvested LR without phytocenotic confinement? What are these types of HR.
6. Give examples of the Republic of Lithuania, the resources which are very vulnerable due to the action of anthropogenic factors (eg, land reclamation activities, plowing, etc.).
7. How is the name of the association?

8.Materialy for classroom self-study:

8.1. List of educational practical tasks which must be completed during the practical (laboratory) classes:

List of recommended the study of objects (plant communities):

Bush-steppe (feather-fescue Association) wood (oak-echinoid and oak-snytevye Ass.) Bottomland or coastal meadow (Ocheretovo-mitlitseva Ass.) Ruderal (kunichnikovo-wheatgrass ass.)

Task 1. Select industrial sector of medicinal plants from a given in the previous lesson array shrub-steppe vegetation on the slopes of the estuaries in an area of the Odessa region. According to the existing scheme (Figure 7) reveal steppe herbs, to make the description of the species composition coenopopulations according to the selected time of the expedition, fill out the description (Table 9).

Filling in specimen - see Uch.. Benefit Rozhkovsky YV et al. Resursovedenie medicinal rasteniy.-Odessa, 2012. C. 63.

Task 2. Select industrial sector of medicinal plants among certain at the previous session in the forest Savranskaya district of Odessa region. According to the existing scheme (Fig. 8) to identify forest medicinal plants, to make the description of the species composition coenopopulations according to the selected time of the expedition, fill out the description (Table 10).

Task 3. Select industrial sector of medicinal plants among the self-defined (in accordance with the homework of the previous topic) array coastal meadow (floodplain) of vegetation in Belyaev district of Odessa region. According to the existing scheme (Fig. 9) to identify medicinal plants, to make the description of the species composition coenopopulations according to the selected time of the expedition, fill out the description (Table 11).

table 9

Blank inventory coenopopulations

.

Customer						
Executor:						
Author:			Inventory number ___		Date "___" _____ 201_r.	
Area coenopopulations:		The area of the inventory:			Relief:	
The geographical position (location)						
Vegetation type:		Association:				
number s / n	plant name	Tier, n / tier	profusion	Architectural project. Valium.,%	Height, cm	Fenofa of
one						
2						
3						
four						
five						
6						
7						
eight						
9						
ten						
eleven						
12						
13						
14						
15						
sixteen						
17						
18						
nineteen						
20						

table 10

Blank inventory tsenopopulyatsiï

Customer						
Executor:						
Author:			Inventory number ___		Date "___" _____ 201_r.	
Area coenopopulations:		The area of the inventory:			Relief:	
The geographical position (location)						
Vegetation type:		Association:				
number s / n	plant name	Tier, n / tier	profusion	Architectural project. Valium.,%	Height, cm	Fenofa of
one						
2						
3						
four						
five						
6						
7						
eight						
9						
ten						
eleven						
12						
13						
14						
15						
sixteen						
17						
18						
nineteen						
20						

table 11

Blank inventory tsenopopulyatsiï

Customer			
Executor:			
Author:		Inventory number ___	Date "___" _____ 201_r.
Area coenopopulations:	The area of the inventory:		Relief:
The geographical position (location)			
Vegetation type:	Association:		

number s / n	plant name	Tier, n / tier	profusion	Architectural project. Valium.,%	Height, cm	Fenofa of
one						
2						
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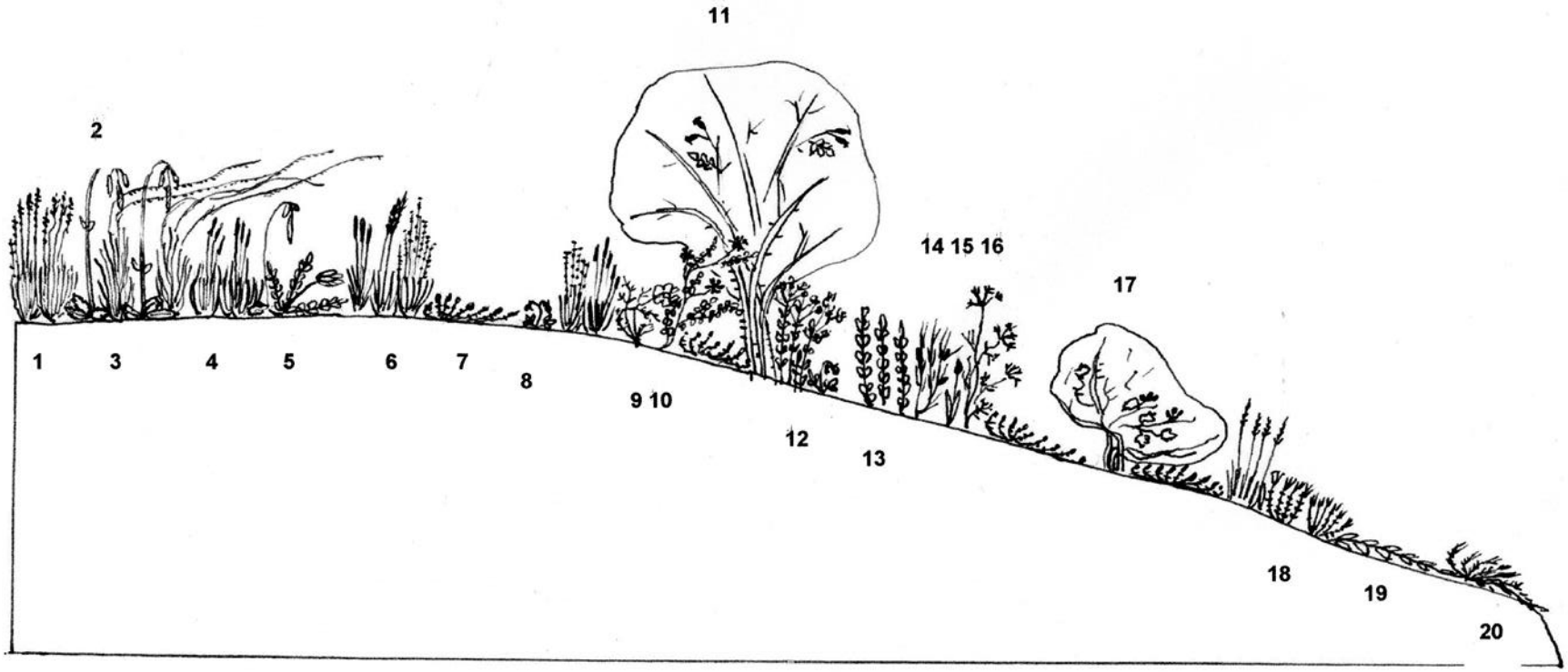
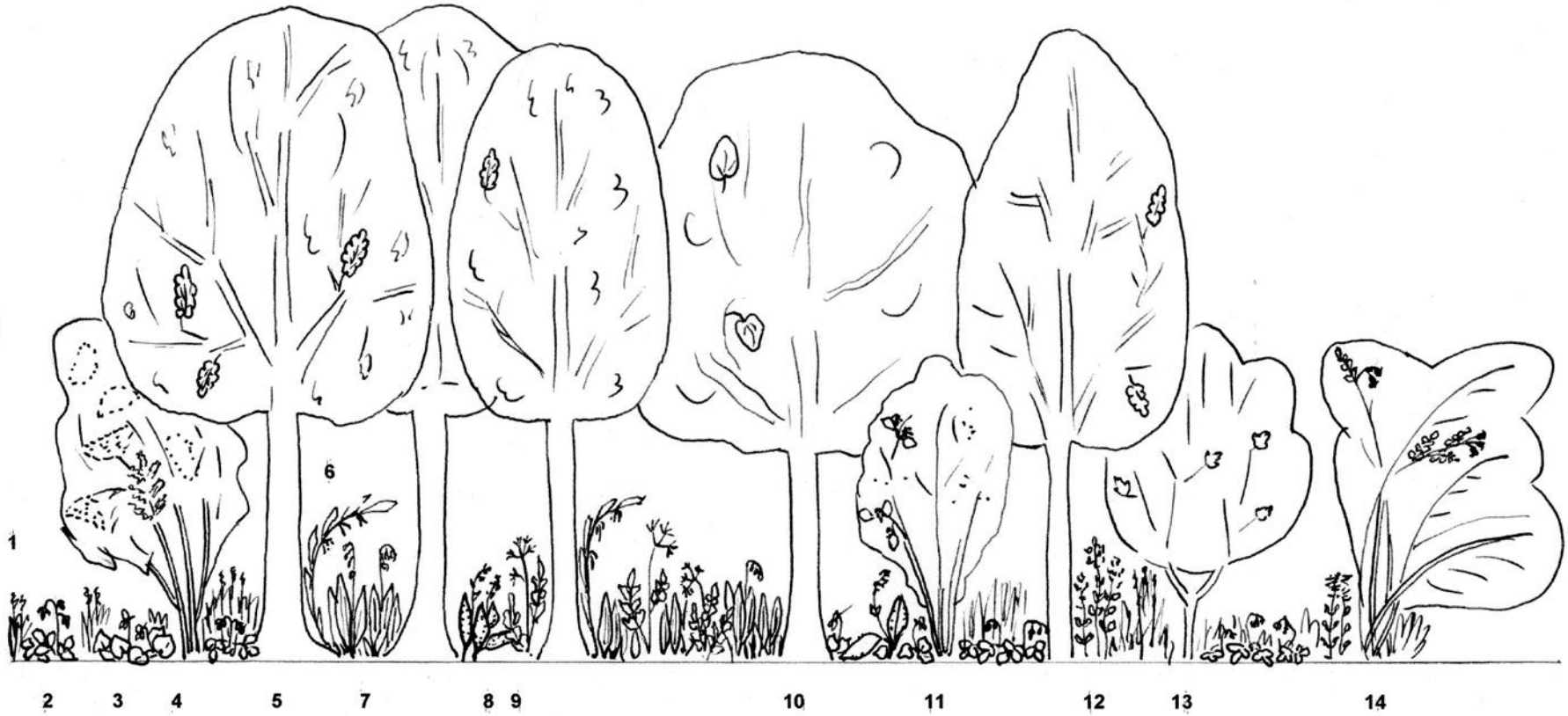


Мал. 6. Схема рослинності степових схилів одеських лиманів

1- Костриця валійська , типчак (фонове); 2- шавлія поникла (зрідка); 3- ковила Лессінга або к.волосиста (дуже рясно); 4- кипець гребінчастий, келерія (рясно); 5- астрагал шерстисто квітковий (зрідка); 6- житняк гребінчастий (рясно); 7- чебрець двовидний (дуже рясно); 8- суниці зелені або суниці рівнинні (рясно); 9- горицвіт весняний або г. волзький (зрідка); 10- в'язіль барвистий (зрідка); 11- шипшина щитконосна або ш.собача (розсіяно); 12- звіробій звичайний (зрідка, розсіяно); 13- карагана кущова (рясно); 14- мигдаль степовий (зрідка); 15- подорожник ланцетолистий (зрідка); 16- жабриця рівнинна (зрідка); 17- глід (розсіяно); 18- самосил білоповстистий (рясно); 19- барвінок трав"янистий (зрідка); 20- віниччя сланке (рясно).

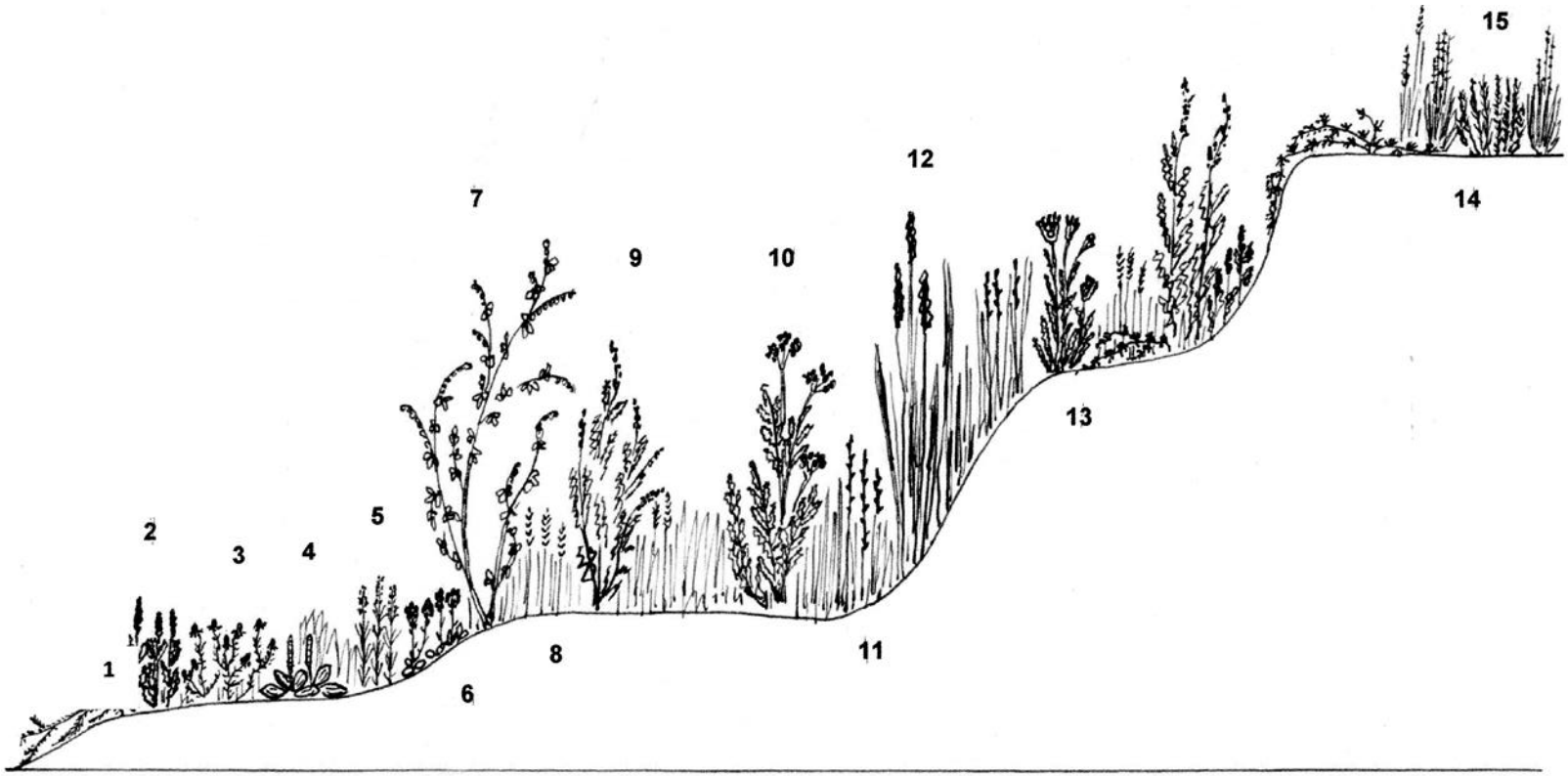


Мал. 7. Схема рослинності діброви

1- Грястиця звичайна (фонове); 2- суниці лісові(рясно); 3- фіалка запашна; ф. дивна (рясно); 4 –бузина чорна (зрідка); 5 –дуб звичайний (домінант); 6- купина багатоквіткова (зрідка); 7- конвалія звичайна (рясно); 8- медунка лікарська (зрідка); 9- яглиця звичайна (дуже рясно); 10- липа серцелиста (рясно); 11 –жостір проносний (зрідка); 12- материнка звичайна (зрідка, розсіяно); 13- клен татарський (рясно); 14 –шипшина собача (зрідка).

Мал. 8 Схема рослинності заплави Дністра

Очерет звичайний (фонове); 2- рогоз широколистий (зрідка); 3- куга озерна, комиш (рясно); 4- лепеха звичайна, аїр (зрідка); 5- частуха подорожникова (зрідка); 6- череда трироздільна (рясно); 7- мітлиця повзуча (дуже рясно); 8- гірчак почечуйний (зрідка); 9- золототисячник гарний (одинично); 10- алтея лікарська (зрідка); 11- подорожник шорсткий (зрідка); 12- вовчуг польовий (зрідка); 13- пирій повзучий (рясно).



Мал. 9 . Схема рослинності приморських схилів

1- Віниччя сланке (рясно); 2 – лобода біла (дуже рясно); 3 – ромашка лікарська (рідко); 4 – подорожник великий (рідко); 5 – злинка канадська (рясно); 6 – цмин пісковий (зрідка); 7 – буркун лікарський (рясно); 8 – житняк гребінчастий (рясно); 9 – полин гіркий (зрідка); 10 – пижмо звичайне (зрідка); 11 – пирій видовжений (домінант); 12 – куничник наземний (дуже рясно); 13 – деревій панонський (зрідка); 14 – костриця несправжньодалматська, типчак (зрідка); 15 – полин австрійський (рясно).

9. instructional materials for learning professional skills, skills:

9.1 Method of implementation of the work, stages of implementation:

A) Specification of the concepts and terms used in resursovedcheskih studies to describe the terrain and phytocenoses with herbs (refill their own dictionary of terms students);

B) Carrying out the geobotanical description of vegetation using provided for the study schematic drawings and signatures to them, as well as the herbarium specimens of the species concerned, different sources of literature for information on their morphological properties.

B) Detection of dominant species in each plant community names and definitions of the respective associations.

10. Materials for self-mastery of knowledge and skills provided by this work.

tests:

1. In Ukraine, productive thickets watch trifoliate can be found

A. Everywhere in weedy places

B. In the clearings in the oak forest

V. On steppe slopes

G. On the forest swamps

D. The plant does not grow in Ukraine.

2. The resources of any kind from the above list are very vulnerable due to the land reclamation activities (drainage of wetlands)

A yellow gentian

B. arnica

B. Adonis spring

G. Brier cinnamon

D. Cranberry

3. Select the plant communities in which to find more productive coenopopulations spring adonis

A. Wetlands

B. Wood

V. Steppe

G. ruderal

D. Meadow

4. Locate the line: RL - distribution of its plant source

A. Leaves orthosiphon staminal

B. Grass knotweed

B. Leaves Datura stramonium

G. peppermint leaves

D. The fruits of fennel a) a plant-cosmopolitan

b) ruderal weed in Ukraine
c) It is cultivated in the tropics
g) It is cultivated in the south of Ukraine
d) The well-known only in cultivation

Answer: A-in; B-A; B-B; G-d; D-h.

5. What kind of wild-growing officinal RL harvest in Ukraine:
A.Herba Equiseti pratensis;
B Herba Equiseti arvensis;
B. Herba Equiseti hyemalis;
G. Herba Equiseti ralustris.
D. Herba Equiseti sylvatici;

6. Medicinal vegetable raw Rhamnus cathartica used as a laxative. Point out that is the raw material of this plant?
A. bark
B. Leaves
B. roots
G. Fruits
D. Shoots

7. buckthorn bark contains antratsenproizvodnye. When it is possible to use harvested measles.
A. 1 year after harvesting
B. freshly
B. 1 month after the workpiece
, Immediately after drying
D. 6 months after harvesting

8. It is known that a succession of grass used as a diuretic and diaphoretic. Pharmacopoeia views are:
A. Bidens radiata
B. Bidens cernua
B. Bidens tripartita
G. Bidens frondosa
D. Bidens orientalis

9. thyme herb harvested in Ukraine. Specify the term for preparation of raw materials.
A. Before flowering
B. In the phase of flowering plants
B. By formation green fruits
G. Period of ripe fruit
D. After harvesting

10. What medicinal herbs is source of preparations containing kardiosteroidy.
A. Folia Sennae
B. Cortex Quercus
B. Radix Taraxaci
G. Folia Ficusi Caricae
D. Herba Convallariae

11. The theme of the next session: The use of herbal medicines in the Republic of Lithuania and the modern world of medical practice (4 hours.)

12. Reference for UDRS and NDRS on the next class

1) To learn the theoretical material on the next topic.

2) Fill in the workbook for the next topic. Fill in all terms

3) To learn the test base Krok scheme

four) Select industrial sector of medicinal plants among the self-defined (in accordance with the homework of the previous topic) array ruderal vegetation in Ovidiopolsky or Kominternovsky district of Odessa region. According to the existing scheme (Figure 10) to identify the medicinal plants, to make the description of the species composition coenopopulations according to the selected time of the expedition, fill out the description (Table 12).

Methodical recommendations were made by ***associate professor Boyko IA***