Ethnobotany. Lecture 1

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January 12th, 2011

Outline

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Course description

The field of ethnobotany studies the uses of plants by humans. This course will focus on the diversity of plant uses, covering approaches of diverse cultures, including plant uses specific to North Dakota, especially plant uses of Native Americans. Objectives are that students:

- will have integral picture of plant uses and their respective cultural background/histories;

- will be able to analyze information accompanying different plant-based products (including pharmaceutical);

- will know basic principles of plant cultivation, useful plant identification and survival based on plant use.

Students will demonstrate this knowledge in a classroom presentation at the beginning of each lab. Laboratories will concentrate on plant cultivation and identification as well as on theoretical ethnobotany (e.g., origin and evolution of cultivated plants and folk classification).

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Instructor

- Dr. Alexey Shipunov
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- Office Hours: Wednesdays and Fridays, 10 a.m. to 12 a.m.
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Lectures Mondays, Wednesdays and Fridays, 9:00 a.m. to 9:50 a.m., Moore 213

Laboratories : Thursdays 9:00 a.m. to 11:50 a.m., **Moore 213** (there will be also outdoor and greenhouse labs)

Textbook : not established, the main source are lectures; there will be some additional electronic texts available in due course.

Exams

- **Four** exams are given during the semester.
- Only the **three best exams** contribute to the final grade.
- Missed exams count zero points. There are **no make-up** exams.

Labs

- Receiving zero points for more than one laboratory results in a **failed course**.
- Grading of laboratories is based on reports and/or drawings.
- Written reports and/or drawings are prepared and finished during laboratory sessions and passed to the instructor right after the particular laboratory session.

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Absence

There are five legitimate reasons for absence:

1. emergency situations,
2. attested medical conditions,
3. military duty,
4. participation in MSU sports events,
5. dependent sick leave.

Absence from exams or laboratories needs to be announced to the instructor in advance **via e-mail**. It is essential to attend lectures since there are no other reference is available at the moment.

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Presentations

- Every lab (except first) will start from short 15 min / 10 slides presentation and practical demonstration (preferably **taste test**) of some cultivated plant.
- Every student in a class should prepare presentation **individually**.
- Presentation is obligatory and **counted as a fifth exam**.
- List of plants for presentations and guidelines will be available for download on the Web site.

Points

A total of 580 points can be earned and are distributed as follows:

Three best exams : 300 points

Presentation : 100 points

Laboratories : 180 points (15 points per lab)

Grading points may vary between exams and labs.

Letter grades

- $A \geq 90\%$
- $B \geq 80\%$
- $C \geq 70\%$
- $D \geq 60\%$
- $F < 60\%$

  A minimum of one letter grade will be deducted from the grade for academic dishonesty / plagiarism.

Tentative course sequence

- Ethnobotanical classifications
- Main food source plants
- Centers of cultivated plants origin
- Sugar and oil plants
- Fruit and vegetable plants
- Technical plants
- Aromatic and psychoactive plants
- Medicinal plants
- Ornamental plants

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Course Web site
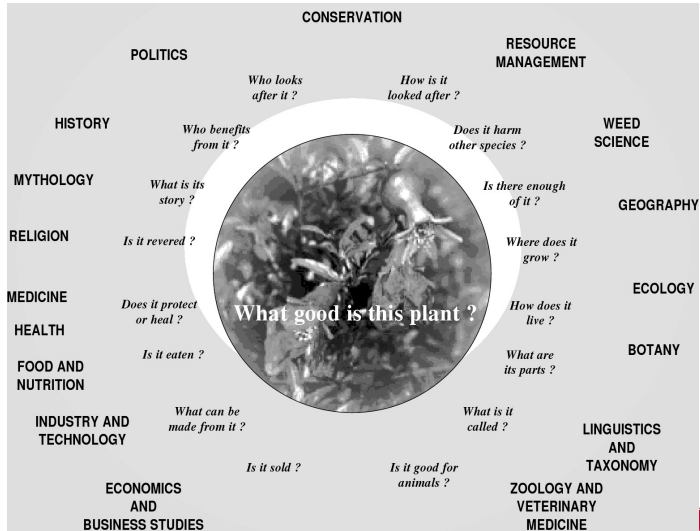

http://ashipunov.info/shipunov/school/biol_310/

Ethnobotany in general

- Ethnobotany is not a "pure" science, it is a multidisciplinary approach on the boundary of botany, genetics, evolution, history, anthropology and sociology
- It may be taught in strikingly different ways, each ethnobotany course is different
- We will concentrate on plant uses along with evolutionary and historical aspects, and will emphasize the use of plants by Native Americans and useful prairie plants of North Dakota

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Ethnobotanical matrix

Basics of scientific classification

- Every plant belongs to several embedded taxonomic groups
- Every group has **name** and **rank**
- Names usually are one Latin word, but species have **binary names**: name of genus + species epithet
- Most important ranks are (in sequence from bigger to smaller): **kingdom**, **family**, **genus** and **species**[*]

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Taxonomic framework for cultivated plants

- All plants belong to its own kingdom, Vegetabilia.
- Most of cultivated plants are angiosperms (flowering plants, Angiospermae).
- In most cases, we will need to **memorize the family** of plant. This is important characteristic since families are stable natural units of common evolutionary origin.

Folk classification

- Folk classification is an ancient approach to plant diversity
- Folk taxonomic groups are created artificially, mainly for practical use (like "edible"/"non-edible")
- Typically, plant in folk classification belongs to so-called "genus-species" and then to bigger group. As an example, "raspberry" is genus-species and it in turn belong to "berries". In science, raspberry is a groups of species in genus *Rubus* which belongs to Rosaceae family.

Artificial classification of plant uses

This classification is again artificial, it will serve as a course plan:

1. **Main** plants (most important food sources): grains, starch-containing, legumes
2. **Sugar and oil** plants
3. **Fruits and vegetables**: fruits, vegetables, nuts
4. **Technical**: fiber, wood, latex, dye, feeding
5. **Aromatic and psychoactive**: spices, stimulating, narcotic
6. **Medicinal**: vitamin, ethereal oil, glycoside, alkaloid etc.
7. **Ornamental**: outdoor annuals, perennials, trees and shrubs, cut plants, indoor pot plants

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Summary

- There are scientific and folk classifications available for cultivated plants
- In ethnobotany course, we will approach plants in accordance with artificial classification of plant uses

For Further Reading

A. Shipunov.
Ethnobotany [Electronic resource].
2011—onwards.
Mode of access:
http://ashipunov.info/shipunov/school/biol_310