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Between Tradition and Science: Veterinary Use of Medicinal Plants in a 19th-Century Hungarian Source

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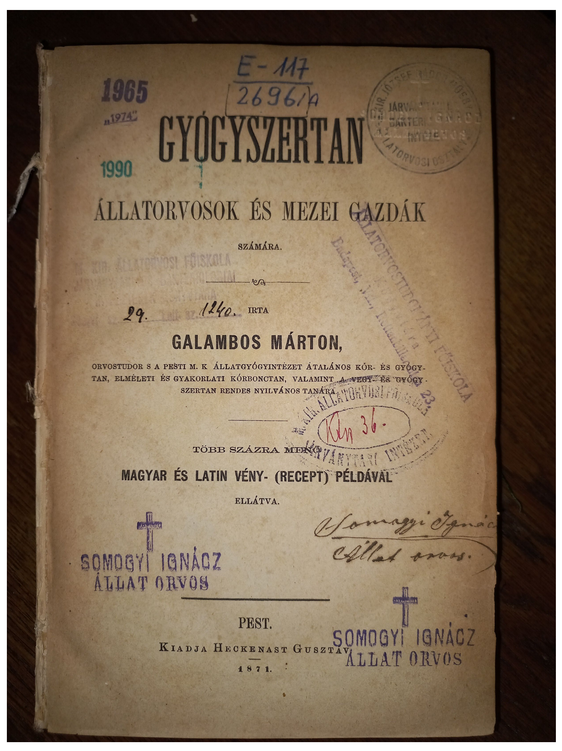
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Introduction

Within the framework of the MedPlants4Vet COST Action, a systematic effort has been undertaken to extract and critically interpret historical veterinary and pharmacological sources. As part of this work, Márton Galambos's 1871 textbook *Pharmacology for Veterinarians and Farmers* has been analyzed, with particular attention to medicinal plant use, terminology, and prescription practices.

Among the medicinal substances described, plant-derived drugs predominate, reflecting the therapeutic practice of the period. The book provides a unique opportunity to explore historical veterinary materia medica.

Márton Galambos (1820–1872) belonged to a generation of scholars with broad interdisciplinary training in the humanities and the medical sciences. His textbook, published in Pest in 1871, was the first veterinary pharmacology manual written in Hungarian and reflects the growing importance of vernacular scientific literature in nineteenth-century veterinary medicine.



Márton Galambos: *Pharmacology for Veterinarians and Farmers, accompanied by several hundred Hungarian prescriptions.*

The textbook comprises 407 pages and is divided into two main parts.

The **General part** discusses the concept of medicine and the modes of action of drugs, providing an overview of 19 categories of pharmacological effects. It outlines the principles and methods of proper dose selection, lists the various units of measurement, and presents the decimal (the precursor of the modern SI system) system together with conversion ratios from traditional units. It gives detailed guidance on how dosages must be adjusted for juvenile animals of different species.

A separate chapter is devoted to the various routes of administration. The rules of prescription writing are illustrated with practical examples. Galambos classifies dosage forms into solid, semi-solid, liquid, and gaseous groups, and further subdivides them according to route of administration and their applicability to different animal species.

The **Special part** first discusses organic – above all plant based, and in some cases animal-based – medicinal substances, followed by inorganic substances, arranged primarily according to their pharmacological effects whenever possible. This section includes botanical descriptions of native species and, for tropical plants, descriptions of the commercially available drug material. For each species, the book describes the medicinal part of the plant, the active ingredients, and, in some cases, the method of extracting the active ingredients. This is followed by a description of the pharmacological effects and therapeutic uses in different animal species.

Of particular note are the 306 recipes presented in the chapter titled **Prescription Samples** which are provided in two languages and described in detail, thereby complementing the book's theoretical content.

Traditional system of active ingredients

Today, a unified classification system based on plant biosynthesis is also recognized in the scientific literature [2]. At the end of the 19th century, the traditional classification of active ingredients was the norm, in which – understandably – not only physicochemical properties but also medicinal uses were taken into account. The categories listed in the book are still in use today, with certain modifications. Interestingly, that the book describes essential oils and plants containing essential oils in several different chapters based on their uses. The "amara aromaticum" are included in the chapter on digestive aids and appetite stimulants; species containing "aroma adstringentia" are classified with tannins; and the remaining essential oil-bearing plants are discussed in a separate chapter along with other volatile components. Alkaloids also did not form a separate category but were presented alongside species containing pungent compounds.

Some species were classified into categories that were completely different from today's, depending on which active ingredient was the basis for their medicinal use at the time.

Use of medicinal plants

The pharmacological classifications do not always correspond to modern knowledge. Some species are assigned indications that are no longer considered appropriate, and several highly toxic plants – long since abandoned in therapy – are also included. In a few cases, he describes therapeutic applications that are now regarded as entirely unacceptable.

The uses of mild native medicinal plants, however, generally align with contemporary understanding.

The author: Márton Galambos (1820–1872)
- veterinarian, physician, military doctor

He was a true polymath: he obtained a degree in the humanities in 1842, a qualification in surgery and obstetrics in 1846, a veterinary degree in 1847, and a medical doctorate in 1858.

For a period of time, he taught nine subjects simultaneously at the Imperial and Royal Veterinary Institute: botany, chemistry, pharmacology, therapeutics, natural history, animal husbandry, obstetrics, general pathology and therapy, and pathological anatomy.

He was among the first to recognize that the infectious agent responsible for rinderpest (pestis bovina) could infect smaller ruminants – such as sheep and goats – and that by artificially inoculating these animals, protective immunity could be induced [1].

The textbook

The scientific medical, veterinary, pharmaceutical, and chemical **terminology of the late 19th century uses Latin terms as well as Hungarian technical terms** created during the language reform of the 18th century.

Galambos describes almost 150 **medicinal plant species**. Based on the **Latin drug names** and Hungarian plant names, most of them can be identified with reasonable precision at the species level, although he only rarely provides binomial Latin names. The **active constituents** are given in Hungarian terminology, often derived directly from Hungarian plant names; Latin chemical nomenclature appears only occasionally.

GENERAL PART

SPECIAL PART

I. Organic medicinal substances
  1. Demulcent, emollient, and nutritive substances
    a. Nitrogen-free
      1. Gums and mucilages
      2. Carbohydrate-containing substances
      3. Fats and oils
    b. Nitrogen-containing
      1. Animal-derived
      2. Plant-derived
  2. Bitter and digestive-enhancing substances
    a. Pure bitters
    b. Bitters containing mucilage or starch
    c. Aromatic bitters
    d. Resinous bitters
  3. Tannin-containing substances
    a. Pure tannin-containing substances
    b. Tannin and bitters
    c. Tannin and volatile oils
    d. Tannin and alkaloids
  4. Volatile substances with transient stimulant effects on the nervous system
    a. Essential oils and aromatic substances
    b. Camphor
    c. Alcohol and ether
    d. Balsams and resins
    e. Ammonia
  5. Acrid, irritant substances
    a. Acrid volatile-oil substances
    b. Alkaloidal acrid substances
    c. Substances containing resins and alkaloids
    d. Substances containing alkaloids and acids
    e. Acrid substances containing volatile oils and resins
  6. Narcotic and circulatory-acting substances
    a. Hydrocyanic acid–containing substances
    b. Substances acting primarily on the brain
    c. Substances acting on the brain, causing mydriasis or affecting the vagus nerve
    d. Substances acting on the spinal cord
II. Inorganic medicinal substances
  1. Non-metallic substances
  2. Metals
    a. Oxides
    b. Alkali metals
    c. Alkaline earth metals
    d. Earth metals
    e. Heavy metals
    f. Noble metals
  3. Mineral and plant acids
    a. Mineral acids
    b. Organic plant-derived acids
III. Physical therapeutic effects
IV. Prescription samples

A set of 306 Hungarian-Latin prescription examples, using the organic and inorganic substances described in the special part, each with a brief indication.

Table of contents of Márton Galambos's *Pharmacology for Veterinarians and Farmers*



Márton Galambos (1820, Selmecbánya – 1872 Pozsony)
https://hu.wikipedia.org/wiki/Galambos_M%C3%A1rton_(orvos)

Historical Analyses and the Preservation of Knowledge

MedPlants4Vet is a COST Action collaboration between 38 European members and associated countries [3].

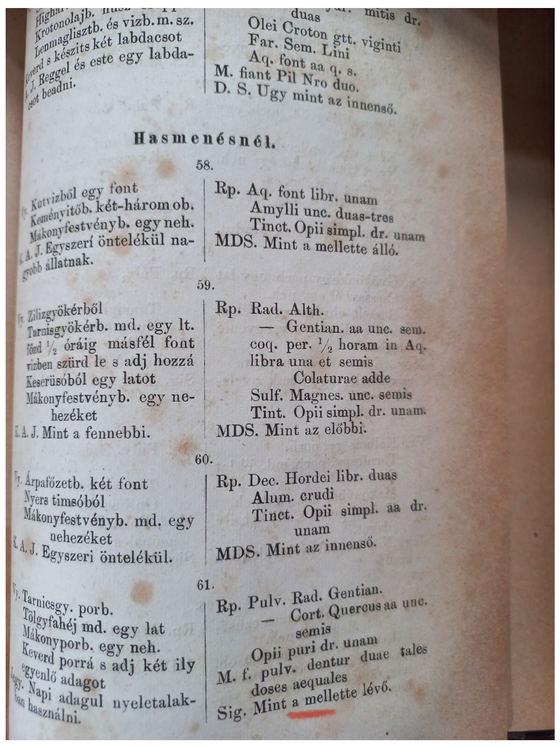
As part of a MedPlants4Vet COST Action working group, we analyzed the content of historical textbooks. We identified pharmacology books published between 1837 and 1975 and held in university libraries across Europe, with the aim of preserving their valuable content on medicinal plants for future generations. Researchers from 20 countries participated in this project. As part of this initiative, we selected the Galambos book presented here from Hungary.

In our analysis, we identified 149 different plant species from this textbook alone – some of which are medicinal plants, while others are now considered poisonous; some are native to Europe, while others originate from tropical regions – and which were used to treat 43 different diseases.

All data were compiled into a shared Excel database, from which we conducted extensive statistical analyses by country, publication date, medicinal plant species, and animal species treated, as well as by the diseases treated and the preparations made from the respective medicinal plant species.

Conclusions

Galambos' textbook represents a unique historical source documenting the early scientific use of medicinal plants in veterinary medicine. Although some therapeutic concepts reflect the medical knowledge of the late nineteenth century, many applications of native medicinal plants remain consistent with current phytotherapeutic practice. Historical analyses of such sources help preserve traditional knowledge while providing valuable material for comparative research on the development of veterinary phytotherapy across Europe.



Twolanguage prescriptions from the Galambos's textbook

Acknowledgments

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