Ethnomedicine in late-eighteenth-century Russia: domestic therapeutics in a modern context

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Research

Abstract

Background: Printed household medical handbooks offer a direct view of lay therapeutics, yet late-eighteenth-century Russian sources remain under-studied. This study examines P. N. Engalychev's Prostonarodnyi Lechebnik [Popular Medical Handbook] (Moscow, 1799) to normalize and catalogue prescriptions, map vernacular names to Latin taxa, and characterize dosage forms and routes used in household practice.

Methods: We conducted qualitative analysis of the 1799 edition, extracting prescriptive entries and coding indication, ingredients (botanical taxa, plant-derived foods, fermented products, plant–mineral combinations, and non-botanical measures), dosage form, and route. Vernacular names were aligned with Latin taxa at species or, where necessary, genus/aggregate level using a concordance. Historical disease terms were harmonized into six clusters.

Results: Fifty-four unique prescriptive entries were identified: febrile/infectious conditions (24/54), gastrointestinal disorders (10/54), scurvy/vitamin-C deficiency (9/54), stone disease (6/54), acute injuries and animal bites (4/54), and obstetric situations (1/54). Oral administration predominated (41/54); topical procedures – compresses, poultices, gargles, steam inhalations – accounted for 13/54. Dosing relied on household measures ("cup," "bottle," zolotnik). Common household remedies recurred across indications and forms, including honey, rhubarb, sage, chamomile, garlic, oats and other cereals, berry juices, cabbage, brines, wine, and vinegar. The formulary was grounded in readily available temperate-zone herbs and foods, with occasional imported items such as clove and saffron.

Conclusions: The Lechebnik depicts a domestic, food-forward repertoire oriented to hydration, diet, and topical care, framed in household measures and adapted to resources. Standardized nomenclature, routes, and thematic assignments, plus a reproducible catalogue of fifty-four entries, provide a structured basis for comparative work on historical household medicine.

Keywords: Ethnomedicine; historical pharmacology; herbal remedies; 18th-century Russia; domestic medical practices

Background

Over the past two decades, scholarship on traditional medicine and its written heritage – handbooks, herbals, and pharmacopeias – has grown steadily, as shown by bibliometric surveys and topic-cluster analyses (Ekor 2013, Musa *et al.* 2022, Pozdnyakova 2024). These sources constitute not only a cultural-historical corpus but also an applied body of knowledge on materia medica, dosage, pharmaceutical forms, and decision-making logic in premodern and early modern therapeutic practice (Bauer 2012).

European herbals and household medical handbooks of the late Middle Ages and early-modern period played a pivotal role in shaping this written tradition. Their recipe profiles and therapeutic motifs have been systematically characterized for the sixteenth and seventeenth centuries (Adams *et al.* 2009). For the English-language corpus, foundational evidence on textual composition, transmission, and the early print market has been synthesized in studies of the early print trade and the first printed herbals (Neville 2021). In parallel, a scholarly natural-philosophical strand (Paracelsus and contemporaries) developed, in which theoretical rationales for plant selection – including the doctrine of signatures – have been reconstructed from Latin corpora and early printed treatises (Lepretre 2021).

In France and Italy, the translation and adaptation of Arabic authorities (Avicenna, Rhazes, Serapion the Younger) strongly influenced university teaching and recipe practice; the impact of this tradition on European medicine has been analyzed in historical-medical overviews (French 1988, Pormann & Savage-Smith 2007). The use of resins and aromatics (camphor, frankincense, myrrh) in medical and paramedical contexts of the early medieval period has been examined using Latin and Greek sources (Burridge 2020). Pharmacological properties of several "traditional" plants prominent in herbals (e.g., chamomile, St. John's wort, plantain) are corroborated by modern reviews (Sanna *et al.* 2022, Otero *et al.* 2024).

Beyond Europe, distinct written traditions evolved. In the Islamic world, Avicenna's *Canon of Medicine* and subsequent Arabic–Persian medicine systematized botanical remedies; recent historical–medical syntheses discuss interpretations of selected sections and their formulary implications (French 1988, Mazengenya & Bhikha 2020, Pormann & Savage-Smith 2007). In Mesoamerica, a key monument is the 1552 Aztec herbal, the *Libellus de Medicinalibus Indorum Herbis*, available in scholarly facsimiles and translations (Emmart 1940).

In Russia, late-seventeenth- and early-eighteenth-century medical culture developed at the intersection of translated literature and local practice: imports of medicinal raw materials, the emergence of pharmacy, and state regulation are documented in administrative records and trade registers (Griffin 2016). Around the Petrine reforms, the institutional infrastructure of pharmacy and medical education took shape, while household handbooks and herbals continued to circulate in manuscript and print, documenting practices of "domestic medicine" (Gerasimova & Mil'kov 2014, Kovtyukh & Falaleev 2022).
Accordingly, systematic analysis of the eighteenth-century Russian-language corpus – including the *Prostonarodnyi Lechebnik* [Popular Medical Handbook] – is essential to the history of medicine and pharmacology as well as to ethnobotany: such texts allow the reconstruction of disease profiles and care practices, the alignment of historical recipes with contemporary data on safety and mechanisms of action, and the identification of durable domestic dosage forms.

The objective of this study is to conduct a multidisciplinary analysis of the recipes in the *Prostonarodnyi Lechebnik* [*Popular Medical Handbook*] (Moscow, 1799): to normalize and classify entries; to relate them to current pharmacological/toxicological evidence and to clinical principles of supportive/symptomatic care; and to reconstruct thematic priorities and modes of application characteristic of provincial settings in the late eighteenth century.

Materials and Methods

Study material

The primary source was a late-eighteenth-century printed edition – *Prostonarodnyi Lechebnik* [*Popular Medical Handbook*] by P. N. Engalychev – of approximately 152 pages (octavo; irregular foliation with duplicated quire numbering: XI, [XII], 1–64, 49–64, 81–152) (Fig. 1).

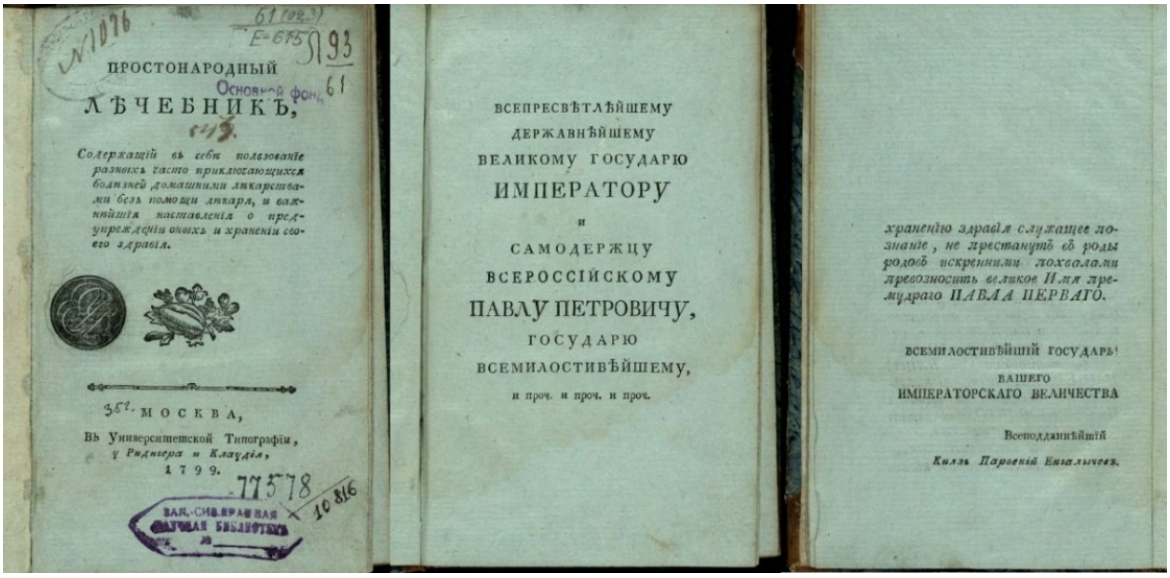

Figure 1. Prostonarodnyi Lechebnik by P. N. Engalychev (1799)

Analysis was performed on the complete text with attention to its pagination irregularities; item-level passport data and an official digital facsimile (NEB “Book Monuments” portal) were used for attribution and page-stable citation cross-checks (Engalychev 1799).

Author and historical-cultural context

Prince Parfenii N. Engalychev (1769–1829) authored several popular medical manuals aimed at domestic lay practice. The *Prostonarodnyi Lechebnik* was conceived as a practical guide to “treat without a physician,” reflecting late-eighteenth-century Enlightenment priorities: affordability of remedies, reliance on local plant materials, and emphasis on dietary and hygienic measures. Its popularity is indicated by early-nineteenth-century reprints and broad household circulation, which makes the text a representative witness of everyday therapeutic practice (Belyakov 2010, Entsiklopedicheskii slovar’ Brokgauza i Efrona 1890).

Storage and access

Owner: Novosibirsk State Regional Scientific Library (State Autonomous Cultural Institution of Novosibirsk Region). Bibliographic particulars (foliation/format): XI, [XII], 1–64, 49–64, 81–152 pp.; 8° (18.5 cm). Imprint: 1799, Moscow, “University Press of Ridiger and Claudia.” Persistent record / Catalogue entry: National Electronic Library (NEB) “Book Monuments” portal (public page: *Prostonarodnyi Lechebnik*).

Study design

We conducted a qualitative content analysis with comparative-historical contextualization. The workflow comprised systematic extraction of prescriptive entries (recipe records), normalization of core fields (ingredients, dosage forms, routes of administration, indications), aggregation of indications into broad nosological clusters, and targeted alignment with contemporary scientific literature on the efficacy and safety of plant-based remedies. The choice of a single-source design was driven by the objective of a deep reconstruction of recipe logic, lexicon, and modes of application within one historically coherent printed corpus. Methodologically comparable single-source studies include computational analysis of the medieval English *Lylye of Medicynes* to identify systematic patterns in ingredient selection and putative biological activity; experimental validation of a single recipe from *Bald’s Leechbook* (“Bald’s eyesalve”) demonstrating anti-staphylococcal activity against biofilms; and an integrated botanical–historical study of the Renaissance herbarium codex *En Tibi*, with a full taxonomic inventory and reconstruction of geographic provenance (Connelly *et al.* 2020, Harrison *et al.* 2015, Stefanaki *et al.* 2018). This strategy improves coding reproducibility, ensures comprehensive within-text sampling, and increases the precision of terminological and formulary attribution. It also facilitates linking the historical material to modern clinical and toxicological evidence at the level of specific prescriptive instructions.

Inclusion and exclusion criteria for recipes

Inclusion criteria. We included all complete prescriptive statements (“recipe records”) that simultaneously specified: (1) a condition/indication; (2) a concrete remedy or mixture, regardless of its nature (botanical, food of animal origin, mineral, or

mechanical); and (3) a minimal instruction for use (preparation form, route/regimen of administration, or dosage in household measures). Substantively duplicate entries were counted once; when the same remedy was recommended across different clinical contexts, such instances were coded as separate records due to differing therapeutic aims.

Exclusion criteria. We excluded general behavioral or dietary advice without a specific ingredient/remedy and mentions lacking a practical instruction for use. Records consisting solely of moral-religious prescriptions or ritual practices without a described remedy/regimen were also excluded.

Terminology normalization and taxonomic mapping

Vernacular ingredient names were systematically aligned to contemporary Latin taxa at the species or, where necessary, genus level; if unambiguous attribution was not possible, we used *spp.* with an explanatory note. For commercial or aggregate names (e.g., "sarsaparilla"), correspondence was fixed at an aggregate level with a brief justification. A unified controlled vocabulary (concordance) was compiled during data extraction and applied across the corpus to ensure internal consistency.

Classification of nosologies, dosage forms, and routes

Historical disease terms were harmonized into six broad clusters reflecting the source's lexicon and topical organization: (1) febrile/infectious conditions (including "hot fever," "colds," "shivering fits," and exanthems such as smallpox and measles in the handbook's terminology); (2) gastrointestinal disorders; (3) scurvy/vitamin-C deficiency; (4) stone disease (urolithiasis); (5) acute injuries and bites; and (6) obstetric conditions. Terms were reconciled by minimal necessary generalization while preserving the original lexeme in each record. Dosage forms were normalized to standard groups (infusion/decoction; juice/expressed sap; poultice/compress/ointment; gargle/steam inhalation; wash/bath); when the form was not explicitly stated, it was marked as "unspecified." Routes of administration were coded as oral, topical, or local, with gargles and steam inhalations flagged as local procedures.

Literature search strategy and alignment with contemporary evidence

Mapping historical recipes to contemporary evidence was performed via targeted searches in PubMed/MEDLINE, Scopus, and eLibrary using combinations of Latin binomial × presumed indication/mechanism/route of use (including synonyms) and terms for vulnerable groups (e.g., pregnancy, pediatric age). Priority was given to higher-level sources from recent decades – systematic reviews, meta-analyses, clinical guidelines, and regulator monographs; in the absence of up-to-date syntheses, earlier foundational publications relevant to the species/genus or dosage form were used. Searches covered 2000–2025 (last updated: 2 Oct 2025). For each historical record, at least one modern source sufficient for cautious interpretation was documented; where evidence was insufficient or conflicting, the record was labeled "limited/contradictory."

Quantitative handling

The quantitative component was limited to descriptive summaries counts of recipes by nosological cluster, by dosage form, and by route of administration, as well as proportions of the total included records where appropriate. Given the single-source design and descriptive scope, no inferential statistics were applied.

Results

Structure of prescriptions by nosological clusters (late eighteenth century)

The distribution of thematic prescriptions in the *Prostonarodnyi Lechebnik* permits a structural description of the recipe corpus (unit of analysis: recipe; N = 54) without claiming to estimate population incidence. The leading cluster comprises febrile and infectious conditions – 24/54 (44.4%). Next are gastrointestinal disorders – 10/54 (18.5%) – and scurvy/vitamin-C deficiency – 9/54 (16.7%). Stone disease accounts for 6/54 (11.1%), acute injuries and bites for 4/54 (7.4%), and obstetric conditions for 1/54 (1.9%) (Table 1).

Table 1. Structure of recipes by nosological cluster (ΣN = 54): count, proportion, and brief historical-epidemiological comment.

Disease cluster	Number of recipes (N)	Proportion, %	Historical-epidemiological comment
Febrile/infectious (smallpox, measles, "hot fever," colds, "shivering fits")	24	44.4	Ubiquitous circulation of exanthems (smallpox, measles) and seasonal respiratory infections; mentions of "intermittent fevers" in the handbook's terminology.
Gastrointestinal disorders (constipation, diarrhea, colic, heartburn)	10	18.5	Water and sanitation conditions; seasonal diarrheal disease; parasitic infections; dietary factors in domestic settings.

Scurvy/vitamin-C deficiency	9	16.7	Winter–spring shortages of fresh greens and fruit; prolonged fasting; limited storage options.
Stone disease (urolithiasis)	6	11.1	Possible factors: hard water, low fluid intake, dietary patterns, physical activity.
Acute injuries and bites	4	7.4	Household injuries and burns; bites from domestic or wild animals.
Obstetric conditions	1	1.9	Home-based care context; limited therapeutic arsenal.

The two leading groups (febrile/infectious + gastrointestinal) together account for 63.0% of all recipes; adding scurvy increases this share to 79.6%. The leading cluster is approximately 2.4 times as frequent as gastrointestinal disorders and approximately 23 times as frequent as obstetric conditions (Table 1).

Catalogue of prescriptive entries (R01–R54)

Through critical editorial analysis and normalization of the printed text of P. N. Engalychev's *Prostonarodnyi Lechebnik* (Moscow, 1799), we identified and standardized to a comparable format 54 unique plant-focused prescriptive entries (R01–R54) (Table 2). A "unique entry" is defined as the combination of nosological target × herbal agent (single ingredient or compound formula) × a distinct preparation/administration instruction. When the same agent was recommended in different clinical contexts (e.g., rhubarb as a laxative for general constipation, on day 14 of smallpox, and during convalescence after measles), these instances were differentiated as separate records (R13, R24, R26), because the context of use and therapeutic intent differ.

Of the 54 entries, 46 refer to botanically identifiable taxa (in some cases resolved only to the genus or aggregate level); four additional items are plant-derived foods/fermented products (honey, vinegar, wine, and a grain distillate "**sivuha**," a homemade grain-based distilled spirit). Two entries represent plant–mineral combinations – R27 (oat gruel plus salt; a warm starch–saline mixture for rectal use) and R52 (cucumber brine; a hypertonic pickling brine) – with the plant component counted as the target remedy and the mineral component recorded in the methods fields rather than treated as a separate plant substrate. Two further entries are non-botanical supportive measures – R53 (calcium carbonate, $CaCO_3$, obtained from powdered crustacean shells) and R54 ("paper insulation" for chilblains/frostbite; i.e., inserting a layer of stiff paper inside footwear as a thermal barrier). Overall, the corpus is dominated by dietetic and household-oriented phytotherapy, with only a small fraction of mineral–mechanical interventions (Table 2).

Dosing metrics and routes of administration

Dosing in the *Prostonarodnyi Lechebnik* is described primarily in household measures familiar to rural and small-estate settings: "cup," "bottle," "a ***zolotnik*** per five spoonfuls of water," "in small portions," and "drink liberally." Standardized apothecary measures (e.g., dram, grain) are virtually absent, consistent with the handbook's popular-educational orientation and its presumption of home-based care. By route, oral prescriptions predominate – 41/54 entries (75.9%). External/topical procedures (compresses, poultices, dressings, gargles, steam inhalations) account for 13/54 (24.1%), clustering in smallpox care, sore throat, catarrhal conditions, and injuries. Gargles and steam inhalations were coded as local methods. Evacuation strategies (oat–saline enema; rhubarb purges) recur as a therapeutic motif (R13, R24, R26, R27, R28).

Core composition of the traditional formulary: recurrent ingredients and clinical versatility

A number of plants and foodstuffs recur across different clinical contexts, forming a stable "core household formulary" of late-eighteenth-century popular medicine (Table 3).

Table 2. Prescriptive entries in the *Prostonarodnyi Lechebnik* (R01–R54): remedy, nosology, and modern safety appraisal.

No.	Disease / condition	Plant remedy (English)	Latin name	Mode of application (per handbook, brief)	Modern safety appraisal (brief)
R01	Fever / “hot fever”	Chamomile (flowers)	*Matricaria chamomilla* L. (syn. *M. recutita*)	Warm infusion, oral, for nausea/retching during fever	Food-level doses generally tolerated; screen for allergy
R02	Fever / thirst	Oat/barley/buckwheat water	*Avena sativa* L.; *Hordeum vulgare* L.; *Fagopyrum esculentum* Moench	Liberal drinking; may be acidified with fruit juice	Rehydration; hygiene of preparation
R03	Fever / thirst	Blackcurrant, raspberry, cranberry juices	*Ribes nigrum* L.; *Rubus idaeus* L.; *Vaccinium oxycoccos* L.	Add to drinks/fruit beverages during fever	Acidity/sugars; dental and gastrointestinal considerations
R04	Weakness in heat	Peppermint (infusion)	*Mentha × piperita* L. (*Mentha* spp.)	Drink as a refreshing beverage	May provoke reflux; not recommended for infants
R05	Rhinitis / “cold”	Sage (steam)	*Salvia officinalis* L.	Steam inhalations, sometimes with vinegar	Avoid prolonged/concentrated exposure; note thujone
R06	Rhinitis / “cold”	Elderflower	*Sambucus nigra* L.	Inhale steam from a heated surface	Generally tolerated; ensure clean raw material
R07	Sore throat	Sage + honey + vinegar	*S. officinalis*; honey; vinegar	Frequent warm gargles	Sugars/acidity – caution with caries/GERD
R08	Cough	Coltsfoot (leaf)	*Tussilago farfara* L.	Infusion orally; warm foot baths	Limit internal use due to pyrrolizidine alkaloids
R09	“Shivering fits” (likely intermittent fevers)	Wormwood + clove + wine	*Artemisia absinthium* L.; *Syzygium aromaticum*; *Vitis vinifera* (wine)	Wormwood juice + ground clove + wine, oral	Restrict dose/duration; ethanol per modern limits; absinthin/thujone adverse effects
R10	“Shivering fits”	Garlic	*Allium sativum* L.	Oral administration with gradual dose escalation	Gastrointestinal irritation; odor
R11	Postpartum weakness	Wine (“good wine”)	*Vitis vinifera* (wine)	Small amount orally “for support”	Ethanol contraindicated in obstetrics; modern restrictions
R12	Fever / heat	Whey or milk with water	–	Drink cooled/warm as tolerated	Lactose intolerance; raw-milk microbiological risks
R13	Smallpox	Rhubarb (root)	*Rheum* spp.	“Cleansing” infusion approximately day 14 of illness	Anthraquinones; not for prolonged use
R14	Smallpox (care)	Garlic poultices	*Allium sativum* L.	Bind to legs/calves; topical on ulcers	Risk of skin burns/irritation
R15	Smallpox (eyes)	Saffron in plain wine	*Crocus sativus* L.; *V. vinifera* (wine)	Moisten cloth; apply to eyelids	Irritation risk; sterility/cleanliness critical
R16	Smallpox (care)	Cabbage leaf	*Brassica oleracea* var. *capitata* L.	Fresh leaves on pustules/wounds	Hygiene; risk of secondary infection
R17	Smallpox (care)	Honey (powder/comb)	–	Apply to drying pocks	Allergy uncommon; product purity
R18	Smallpox (diet)	Oat porridge + baked apples	*Avena sativa* L.; *Malus domestica* Borkh.	Light food in small portions	Food-level doses; individual tolerance

R19	Smallpox (thirst)	Cranberry juice	*Vaccinium oxycoccos* L.	Give to drink during fever/drying of pocks	Acidity; sugar control
R20	Smallpox (diet)	Cereal/milk diet	*Avena, Hordeum,* etc.; milk/whey	Abstain from meat; light cereals/milk	Lactose; dietary tolerance
R21	Measles (early)	Rye root	*Secale cereale* L. (root)	Decoction, oral	Limited evidence; dietary safety
R22	Measles	Marshmallow	*Althaea officinalis* L.	Root decoction, oral	Generally safe; mucilage
R23	Measles (mixture)	Sarsaparilla	*Smilax* spp.	Decoction (as part of a mixture)	Species misidentification/quality risks
R24	Measles (post-illness)	Rhubarb (purge)	*Rheum* spp.	1–2 purges (short laxative purge)	Anthraquinones; caution in children/pregnancy
R25	Measles (drinks)	Honey (sweetener)	–	Sweeten drinks/decoctions	Allergy; caries risk
R26	Constipation	Rhubarb (root)	*Rheum* spp.	Infusion; laxative (children/adults)	Anthraquinones; avoid overuse
R27	Constipation (enema)	Oat gruel with salt	*Avena sativa* L. + NaCl	Warm starch–saline enema; volume by age	Electrolyte balance; solution hygiene
R28	Colic	Warm herbal poultices	(often *Matricaria/Artemisia*, etc.)	Topical to abdomen; repeat ~every 3 h	Local tolerance; cleanliness
R29	Colic/heartburn	Vodka / “sivuha”	Grain distillate (ethanol)	Small oral dose at symptom onset	Ethanol – GI irritation; dependence risk
R30	Diarrhea	Bread water (infusion on rusks)	*Triticum aestivum* L.	Drink instead of water during diarrhea	Hygiene; does not replace oral rehydration salts
R31	Simple diarrhea	Millet/buckwheat porridge (in water)	*Panicum miliaceum* L.; *Fagopyrum esculentum*	Diet without milk/butter	Food-level doses
R32	Bloody diarrhea	Fruits (apple, grape, currant, strawberry, etc.)	*Malus domestica*; *Vitis vinifera*; *Ribes nigrum*; *Fragaria vesca* L.; etc.	Eat raw/boiled; may be taken with milk	Sugars/fiber; caution during diarrhea
R33	Acid heartburn	Honey + sugar + water	Honey; *Saccharum officinarum* L.; water	A cup of the mixture for sour belching	High glucose; dental/GERD concerns
R34	Bite of a rabid dog (wound)	Garlic (paste)	*Allium sativum* L.	Apply paste to wound	Skin irritation; does not replace vaccination/PEP
R35	Burns (blister)	Grated apple + oil	*Malus domestica*; vegetable oil	Dressing on the blister	Cleanliness; maceration risk
R36	Contusions	Vinegar lotion (± vodka)	Vinegar; ethanol	Moisten and apply as a lotion	Skin irritation; avoid open wounds
R37	Scurvy / vitamin-C deficiency	Spinach	*Spinacia oleracea* L.	Daily as food (raw/boiled)	Food-level doses
R38	Scurvy / vitamin-C deficiency	Lettuce	*Lactuca sativa* L.	As food	Food-level doses
R39	Scurvy / vitamin-C deficiency	Purslane	*Portulaca oleracea* L.	As food	Food-level doses

R40	Scurvy / diuresis / other	Parsley	*Petroselinum crispum* (Mill.) Fuss	As food; decoctions	High doses undesirable in pregnancy
R41	Scurvy / diuresis / other	Celery	*Apium graveolens* L.	As food	Possible photosensitivity; caution in pregnancy
R42	Scurvy / vitamin-C deficiency	Strawberry, raspberry, currant, peach, apple, etc.	*Fragaria vesca*; *Rubus idaeus*; *Ribes nigrum*; *Prunus persica*; *Malus domestica*	Regularly, fresh/boiled	Food-level doses
R43	Scurvy / respiratory	Scots pine shoot tips	*Pinus sylvestris* L. (shoots)	Decoction, oral, daily	Resins: taste/tolerability; dose-dependent effects
R44	Scurvy / respiratory	Pine resin water	*Resina Pinus* spp. in water ("resin water")	Aqueous extract, oral	Irritation; dose-dependent
R45	Scurvy / diet	Cabbage (as food)	*Brassica oleracea* var. *capitata* L.	Part of a "green" diet	Food-level doses
R46	Stone disease (urolithiasis)	Parsley (leaf/root)	*Petroselinum crispum*	As food; diuretic decoctions	Pregnancy caution; photosensitivity possible
R47	Stone disease (urolithiasis)	Artichoke	*Cynara scolymus* L.	As food	Food-level doses
R48	Stone disease (urolithiasis)	Asparagus	*Asparagus officinalis* L.	As food	Food-level doses
R49	Stone disease / secretions	Carrot, radish, horseradish, onion	*Daucus carota*; *Raphanus sativus*; *Armoracia rusticana*; *Allium cepa*	As food; stimulation of secretions	Horseradish irritation; individual tolerance
R50	Stone disease / diuresis	Dill	*Anethum graveolens* L.	As food / diuretic decoctions	Food-level doses
R51	Stone disease / demulcent	Flaxseed + rye root	*Linum usitatissimum* L.; *Secale cereale* L.	Mucilaginous decoction; mixtures (sometimes with whey)	Food-level doses; fiber considerations
R52	Constipation with fever	Cucumber brine	*Cucumis sativus* L.; NaCl	Drink in small portions throughout the day	High salt load; microbiological risks of homemade brines
R53	Diarrhea / alternating stools	Calcium carbonate (powder)	$CaCO_3$ (from powdered crustacean shells)	Adults ~⅓ ***zolotnik***; infants ~⅙; 3–4×/day (***zolotnik*** ≈ 4.26 g; ⅓ ≈ 1.4 g; ⅙ ≈ 0.7 g)	Risk of constipation/hypercalcemia; impurities
R54	Chilblains / frostbite	Stiff paper (wrapping)	–	Place under stockings/inside boots; gradual rewarming	Safe physical measure; avoid vigorous rubbing

Note: Traditional Russian units of measurement. **Zolotnik** – an old Russian apothecary weight unit equivalent to 4.26 grams, frequently used for powdered or dry substances in 18th–19th century medical recipes. **Funt** – a Russian pound, approximately 409.5 grams. **Charka** – a traditional small liquid measure, roughly 123 milliliters. **Butilka** – literally "bottle," typically 750–1000 milliliters depending on context and regional tradition.

Table 3. "Core household formulary" – ingredients with multiple uses in the *Prostonarodnyi Lechebnik* (N = 54 recipes).

Ingredient	Mentions	Principal nosologies	Forms/routes
Honey	4	Sore throat, smallpox, acid heartburn, dietary beverages	Gargles, dressings, sweetener, oral
Rhubarb (*Rheum* spp.)	3	Smallpox, measles, constipation	Root infusion; laxative (oral)
Sage (*Salvia officinalis* L.)	2	"Colds," sore throat	Steam inhalations; gargles
Chamomile (*Matricaria chamomilla* L.)	2	Fever, colic	Infusion (oral); poultices
Oats/other cereals (*Avena, Hordeum, Fagopyrum*)	4	Fever, smallpox, constipation	Drinks, porridge, enema
Berry crops (*Ribes nigrum, Rubus idaeus, Vaccinium oxycoccos*)	4	Fever, smallpox, scurvy	Juices, beverages/decoctions (oral)
Cabbage (*Brassica oleracea* var. *capitata*)	2	Smallpox, scurvy	Dressings; eaten as food
Parsley (*Petroselinum crispum*)	2	Scurvy; stone disease	Leaves/root as food; decoctions
Rye (*Secale cereale*)	2	Measles; stone disease (mixtures)	Root decoction; mucilage decoctions
Apple (*Malus domestica*)	3	Smallpox, bloody diarrhea, burns	Baked/raw; dressings
Vinegar	3	"Colds," sore throat, contusions	Inhalations, gargles, compresses
Wine	3	Fever, smallpox ocular applications, postpartum "support"	Oral intake; lotions/compresses

Note: Counts are over unique entries (R01–R54). If the same ingredient is used in several clinical contexts, it is counted for each unique indication.

This recurrent use of inexpensive and readily available ingredients (honey, garlic, dried medicinal herbs, grains, cabbage, berries) reflects a persistent hierarchy of "household" remedies and their functional flexibility across therapeutic sections of the *Lechebnik*.

Geographical and cultural conditioning of the formulary: between local flora and trading pharmacopeias

The composition of remedies is drawn primarily from temperate-zone food crops of Russia and Northern/Central Europe accessible in rural households: cereals (oats, rye, barley, millet, buckwheat), cabbage, root vegetables (carrot, radish), garden greens (parsley, celery, dill, lettuce), woodland and orchard berries (currant, raspberry, strawberry, cranberry), onion, and garlic. Fermented and household products (vinegar, "bread water," cucumber brine), honey, and dairy components capture everyday preservation/processing technologies and expand the notion of a "therapeutic kitchen." Exotic or imported items appear episodically (saffron with wine for ocular symptoms in smallpox; sarsaparilla in a measles mixture; clove with wine for "shivering fits"), indicating contact with trading/learned pharmacopeias; their overall proportion is small. Forest resources (shoot tips of Scots pine and "pine resin water") function as seasonally available remedies associated – within the source's rationale – with strengthening and "cleansing" effects, used in antiscorbutic/respiratory contexts.

Toxicological classification according to contemporary safety criteria

Key potential-risk groups (examples correspond to Table 2):

1. Essential-oil–rich taxa (potential neuro/hepatotoxic constituents).

Salvia officinalis (steam/gargles; R05, R07): attention to thujone exposure (avoid prolonged or concentrated use).

Artemisia absinthium with clove and wine (R09): additive risks (thujone + ethanol + pungent oils).

2. Pyrrolizidine alkaloids.

Tussilago farfara (R08): limit internal use and duration.

3. Alcohol-containing uses.

Internal (wine for parturient "support," R11; wine within anti-periodic scheme, R09; strong distillate for colic/heartburn, R29).

External/topical (lotions with vodka, R36; wine in ocular applications, R15).
Modern restrictions apply in pregnancy and lactation, pediatric care, gastropathy risk, and ocular safety.

4. Allergenicity and sugar load.
Honey uses (R07, R17, R25) and the honey–sugar–water mixture for heartburn (R33): dental/GERD risks; absolute avoidance of honey in children <1 year.

5. Microbiological safety of dietary liquids.
Whey/milk (R12) and dairy in smallpox diets (R20): contamination risk; during fever, prioritize safe rehydration.

6. Hypertonic salt loads and electrolytes.
Cucumber brine (R52) and saline enemas (R27): sodium/osmolar load; large volumes should be avoided; use boiled water and hygienic preparation.

7. Cutaneous irritants and topical applications.
Garlic poultices (R14), vinegar lotions (R36), horseradish in sensitive mucosa (R49): possible burns/irritation; cleanliness, dosing frequency, and monitoring are important.

8. Photosensitization and pregnancy.
Petroselinum crispum (R40) and *Apium graveolens* (R41): furocoumarin-related phototoxicity; restrict in pregnancy.

9. Anthracene derivatives (stimulant laxatives).
Rheum spp. (R13, R24, R26): avoid prolonged/high-dose use; specify precautions for children and pregnancy.

10. Non-botanical measures requiring special precautions.
Calcium carbonate (R53): constipation/mineral imbalance with repeated dosing.
Paper insulation for chilblains/frostbite (R54): a simple physical measure; avoid vigorous rubbing and abrupt rewarming.

Discussion

Analysis of P. N. Engalychev's Prostonarodnyi Lechebnik (1799) indicates that its recipe corpus was constructed for rural and small-estate household settings in the central provinces of the Russian Empire: the stated aim is "to be treated without a physician," and remedies, doses, and forms are specified in "kitchen" units – "cup," "bottle," "a **zolotnik** per five spoonfuls of water." This orientation is broadly consistent with historical patterns in the period's socio-epidemiology: febrile infections (smallpox, measles, "hot fevers"), water- and food-borne disorders, and deficiency states (notably scurvy) predominated in provincial communities (Zeland 2022, Riedel 2005, Varfolomeev 2023). Accordingly, the book's formulary mirrors the disease pattern of socially vulnerable groups for whom consulting a university-trained physician was either prohibitively expensive or impossible.

Many prescriptions have biologically plausible correspondences in modern pharmacognosy and in supportive care. For "hot fevers" and "shivering fits" (likely historical "intermittent fevers"), supportive measures (liberal intake of cereal-based decoctions, sour fruit beverages, gentle diet) align with the role of nutrition and hydration in acute viral respiratory infections (Govers *et al.* 2022). Starchy cereal/rice decoctions have historically been used during dehydration; their high starch content improves water retention and palatability (Chithambharan *et al.* 2024). The recommendation of bitter wormwood for "shivering" fever is broadly consistent with modern findings: *Artemisia* species contain constituents active against malaria pathogens; although *A. absinthium* lacks artemisinin, several *Artemisia* species exhibit antiprotozoal activity, rendering the historical recommendation biologically plausible as a symptomatic/supportive measure (Gruessner & Weathers 2021, Ramazani *et al.* 2010). Garlic's domestic use reflects tradition; its role is limited to mild antimicrobial/immunomodulatory effects in household contexts (Santhosha *et al.* 2013).

For common "colds" (rhinitis, sore throat, cough), warm humidified air may help mucosal hydration and mucociliary clearance (NICE 2025). Sage gargles are rational: essential oils of *Salvia officinalis* have local anti-inflammatory/antiseptic effects; a randomized trial of a sage + echinacea throat spray in acute pharyngitis showed non-inferiority to a lidocaine/chlorhexidine spray (Schapowal *et al.* 2009). By contrast, internal use of coltsfoot (*Tussilago farfara*) warrants caution due to pyrrolizidine alkaloids (Adamczak *et al.* 2013, Chen *et al.* 2021).

Smallpox care measures in the handbook emphasize supportive therapy (liberal fluids, light nourishing diet, cutaneous care), which accords with modern understandings, although the disease is eradicated (Moore *et al.* 2006, Thèves *et al.* 2016). Honey as a wound dressing has supportive evidence in selected acute/chronic wounds (medical-grade products) (Fox 2002, Ogwu & Izah 2025). Cabbage leaves (*Brassica oleracea* var. *capitata*) are used as cooling dressings in folk practice; experimental and small clinical studies suggest modest anti-inflammatory and edema-reducing effects (Chobpenthai *et al.* 2022, Napisah *et al.* 2021, Ray *et al.* 2021). Irritant applications (e.g., garlic on intact skin) carry a risk of chemical burns and are not recommended.

For measles, prevention relies on vaccination; treatment is symptomatic (rest, antipyretics, rehydration), with high-dose vitamin A for children in specified settings (Goult *et al.* 2024, Lo Vecchio *et al.* 2021). Marshmallow root (*Althaea officinalis*) has demulcent properties and may soothe cough; honey reduces nocturnal cough frequency (Cohen *et al.* 2012, Fink *et al.* 2018). There is no evidence that rye root or sarsaparilla is anti-measles; their role was likely dietary/fluid support.

Urolithiasis recommendations emphasize accessible food plants (parsley, asparagus, artichoke; salads with carrot, radish, horseradish, onion), dill tea, mucilaginous flaxseed decoction, liberal intake of spring water, moderate walking, and limiting salty/fatty foods. Contemporary nephrology confirms a key principle: higher daily urine volume lowers stone risk (Gamage *et al.* 2020). Parsley and dill possess mild diuretic/antispasmodic effects; flaxseed decoction can reduce urinary-tract irritation (Al-Ameedi 2018, Kreydiyyeh & Usta 2002). Diets richer in potassium/magnesium help shift urinary pH – beneficial for oxalate/urate stones (Reddy *et al.* 2014). Thus, the handbook's recommendations align with modern preventive principles, but do not substitute for evidence-based management.

Dietary/beverage prescriptions for constipation/diarrhea are congruent with modern practice. Short-term use of anthraquinone-containing laxatives such as rhubarb root (*Rheum* spp.) remains acceptable within defined limits (Gong *et al.* 2015). For acute diarrhea, emphasis on rehydration and a light diet echoes contemporary standards; "bread water" is a starch solution analogous to rice water, which can function as an adjunct to oral rehydration and reduce stool volume in children (Mangahas & Resurreccion 2021).

Antiscorbutic recommendations (greens and berries; pine shoot tips/needle preparations) accord with the etiology and treatment of scurvy as ascorbic-acid deficiency; regular dietary intake is sufficient (Gandhi *et al.* 2023). Pine needles contain vitamin C in meaningful amounts; historical accounts describe Indigenous treatments of scurvy with pine-needle decoctions (Durzan 2009).

Local injuries and trauma combine sound hygienic intuition with period-specific elements. Rubbing burns with salt is harmful; first aid centers on prolonged cooling with running water (Sasor & Chung 2019, Djärv *et al.* 2022, Sussman 2023). "Paper insulation" for chilblains/frostbite and gradual rewarming are consistent with modern guidance (Zaramo *et al.* 2022); the insulating effect is physically explicable and consistent with materials data (Kuklane 2004). Early reduction of a fresh dislocation before significant edema develops is associated with better outcomes in field settings (Woyke *et al.* 2023).

Obstetric content is minimal and reduces to advice to give a parturient a small amount of wine "for support." In modern obstetrics this is unacceptable: alcohol use during pregnancy and labor is contraindicated; there is no safe dose (ACOG 2025). Attempts to use ethanol as a tocolytic are unsafe and ineffective (Haas *et al.* 2015).

A further salient feature is that Engalychev's recommendations are predominantly formulated in "kitchen" measures, whereas classical apothecary ounces, drams, and scruples – frequent in Western European printed herbals and manuscript receipt books – are virtually absent. This de-professionalized dosing confirms that the book was intended for non-professional use and positions itself against the pharmacy, where a strict apothecary system of weights persisted well into the nineteenth century (Leong 2008; Transactions of the Associated Apothecaries 1823). Similar patterns have been described in early-modern British and continental "domestic" collections, where therapeutic practices and cookery were tightly interwoven and the kitchen functioned as the key site for making "household medicines" (Leong 2008). Additional evidence from Scottish materials likewise demonstrates the predominance of household, kitchen-based care in the seventeenth–eighteenth centuries (Holmes 2022).

Conclusion

The interdisciplinary analysis of P. N. Engalychev's *Prostonarodnyi Lechebnik* (1799) shows that its recipe corpus reflects (and is broadly representative of) the everyday needs of provincial medicine in the late eighteenth century, concentrating on

febrile and catarrhal conditions, digestive disorders, and prevention of deficiency states. Recommendations are systematically framed in “kitchen” measures and simple modes of preparation, evidencing an orientation toward home use and early popularization of medical knowledge. The functional structure is comparable to early-modern European herbal traditions, yet adapted to a local resource base and seasonal availability, embodying a principle of practical self-sufficiency. Within the corpus, dietary, physical, and simple pharmacological interventions are consistently combined – including non-botanical and composite measures – amounting to a holistic “therapeutic kitchen” of the period. Comparison with contemporary practice reveals substantive resonances with supportive/symptomatic care and household prevention (hygiene, rehydration, gentle diet), while also delineating areas that require critical reappraisal in light of current standards.

Methodologically, the study normalized and coded the entire set of recipes, standardizing nomenclature, routes of administration, and thematic assignment. The normalized coding scheme and explicit mapping procedures provide a reproducible basis for comparative analyses across historical corpora and for prioritized pharmacognostic/toxicological appraisal in future work.

Declarations

List of abbreviations: NEB - National Electronic Library (“Book Monuments” portal); pp. - pages; 8° - octavo (book format); e.g. - for example; i.e. - that is; spp. - multiple species (various species); syn. - synonym; var. - botanical variety (infraspecific rank); NaCl - sodium chloride; $CaCO_3$ - calcium carbonate; PEP - post-exposure prophylaxis; GI - gastrointestinal; GERD - gastroesophageal reflux disease; cm - centimeter(s).
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