PH-02 The Mediterranean and the Middle East: Dioscorides' home ground

HEALING after the FALL, research library, PH-02

Researched 10 October 2026 by Claude Opus agent for THRIVING after the FALL, Book Four. Library document, unverified.

Scope and method

This report is for a reader between Lisbon and Baghdad, on dry hills with olives, goats and wells. It does not repeat the temperate plants graded in the home pharmacopoeia (THRIVING library, PH-01), which this household will also use: sage, thyme, fennel, chamomile, garlic, linseed and the rest. Preparation methods are in ME-01, Unani theory in TR-04, and the lookalikes that kill, oleander above all, in PH-10 (THRIVING library, ME-01, TR-04, PH-10).

Sources were the EMA herbal committee (HMPC) monographs and the Egyptian Drug Authority (EDA) monographs, both read in full or in long extract, trials and reviews read mostly as abstracts, poison-centre series, and the Eclectic dispensatories of 1898 and 1922 for the pre-antibiotic record. Beck's translation of Dioscorides could not be read, so claims attributed to him are secondary and marked. Grades: A randomised trials or systematic reviews, B consistent clinical series including the pre-antibiotic record, C convergent use across unrelated cultures with plausible pharmacology, D one tradition or anecdote, X ineffective or harmful. A grade belongs to the preparation tested, and one small trial earns at most B. The EDA often copies EMA doses, so where the two agree they are usually one source, not two.

1. Dioscorides' home ground, on its own terms

Pedanius Dioscorides, an army physician from Anazarbus in Cilicia, wrote *De materia medica* in five books in the first century. Beck's translation, from Max Wellmann's Greek text of 1906 to 1914, is the first modern English version (Beck 2005, reviewed in LiDonnici 2006). A reviewer counts about 2,000 recipes in it, built mainly on plants (LiDonnici 2006, summarising an Italian review) [VERIFY]. John Riddle argued that its order is not arbitrary but follows "drug affinities", groups of drugs that Dioscorides had seen act alike on the body, so the book records clinical observation rather than botany (Riddle 1985, publisher's and catalogue descriptions only). If Riddle is right, his uses deserve testing one by one. Either way the book is not evidence on its own.

Galen added a theory: each drug has a temperament, hot or cold, dry or moist, in four degrees, and cures by opposing the patient's imbalance. That theory, carried into Unani, is set out in TR-04 and is not graded here, because it makes no prediction a village can test.

The Arabic and Persian physicians added three things. First, drugs. Ibn al-Baytar of Málaga (died 1248) compiled the largest medieval list of simples, the *Kitab al-Jami li-mufradat al-adwiya wa-al-aghdhiya*, printed at Bulaq in 1874 and translated into French by Lucien Leclerc as *Traité des simples* (1877 to 1883, Wellcome Collection record). One account says Islamic physicians added 300 to 400 drugs to roughly 1,000 known since antiquity (Muslim Heritage, undated), which fits the usual figure of about 1,400 entries [VERIFY]. Second, forms: syrup, julep, the oxymel called

sikanjabin, distilled waters. Third, method: Ibn Sina's seven rules for testing a drug, the closest pre-modern statement of a trial (THRIVING library, TR-04). The standard survey is Pormann and Savage-Smith (2007), read only through catalogue entries and reviews. The Unani Pharmacopoeia of India now codifies the tradition, its Part I holding 298 single-drug monographs in six volumes (Ahmad 2023) [VERIFY].

The region adds four classes of drug that temperate Europe lacks. Tapped resins: mastic, frankincense, myrrh. A fruit oil that is food, vehicle and medicine: olive. Desert purgatives: senna, aloe latex, colocynth. And plants with narrow margins: squill, rue, pomegranate root bark. The first two are the region's gift, the last two its danger.

2. The ranked table

Ranked by value at the bedside: grade, weighted by how common the problem is and how easily the plant grows, penalised for harm. Adult doses.

#	Plant, part	Preparation	Use and grade	Dose	Harms	Lookalikes, confusions
1	*Senna alexandrina*, leaflet and pod	Infusion or powder at night	Constipation, A	10-30 mg sennosides once at night, at most 1 week. Leaf about 0.5-1.5 g [VERIFY conversion]	Potassium loss, nappy blisters. Never in obstruction, pregnancy, under 12	Other *Senna* and *Cassia* species, colutea
2	*Olea europaea*, fruit oil	Food, salve base	Cardiovascular events within a Mediterranean diet, A	15-50 ml a day as food	Fresh herb in kept oil risks botulism	None for the tree
3	*Ceratonia siliqua*, pod	Juice or flour with ORS	Child diarrhoea alongside ORS, B	Not fixed. See section 4	None found at food doses	None
4	*Pistacia lentiscus* var. *chia*, resin (mastic)	Powder or chewed tear	Dyspepsia, B. Duodenal ulcer, B. H. pylori cure, X	0.5-1 g twice daily, at most 2 weeks without review	Few. Not under 18 (EMA)	Terebinth resin sold as mastic
5	*Commiphora myrrha* (*C. molmol*), oleo-gum-resin	Tincture 1:5 in 90 per cent ethanol	Mouth ulcers and gums, C. Small wounds, C. Schistosomiasis, X	0.5-5 ml tincture in 150 ml water, rinse 3 times daily	Contact allergy. Not under 12 or in pregnancy	Opopanax, bdellium

#	Plant, part	Preparation	Use and grade	Dose	Harms	Lookalikes, confusions
6	*Boswellia serrata*, resin extract	Standardised extract with food	Knee osteoarthritis, A (extract only). Gingivitis, C	Extract 300-400 mg 3 times daily (EDA). Raw resin 1-3 g a day	Heartburn. Not in gastritis	Other *Boswellia* species are not inter-changeable
7	*Nigella sativa*, seed and oil	Powder or oil	Fasting glucose, B. Blood pressure, C. Asthma, C	Seed 1-3 g a day, oil 1-5 ml a day, 1 to 3 months	Oil dermatitis. Not in pregnancy	*Nigella damascena*
8	*Aloe vera*, inner leaf gel	Fresh gel on the skin	Superficial burns, B. Open surgical wounds, X	Thin layer 2-3 times daily	Slows deep wounds	The latex layer under the rind
9	*Punica granatum*, fruit rind	Decoction	Diarrhoea, D. IBS with diarrhoea, B (one trial). Gargle, C	Peel 2.5-4.5 g a day in divided doses	Delays ORS if trusted	None
10	*Pimpinella anisum*, fruit	Crushed seed infusion	Wind and cramp, cough, C	1-3.5 g in 150 ml, 3 times daily, at most 2 weeks	Allergy. Oil not under 18	Star anise and *Illicium anisatum*, hemlock fruit
11	*Salvia rosmarinus* (*Rosmarinus officinalis*), leaf	Infusion	Dyspepsia, C	1-2 g in 150-250 ml, 2-3 times daily, at most 2 weeks	Not with gallstones, liver disease or in pregnancy	None serious
12	*Trigonella foenum-graecum*, seed	Poultice, tea	Boils, C. Poor appetite, D	Poultice 50 g in 250 ml. Tea 1-2 g 3 times daily	Low blood sugar, legume allergy. Not in pregnancy	None serious
13	*Lavandula angustifolia*, flower and oil	Tea or measured oil	Anxiety, A (Silexan capsule only). Sleep, D	Tea 1-2 g in 150 ml, 3 times daily	Oils on young boys questioned	Camphor-rich lavenders
14	*Crocus sativus*, stigma	Powder or infusion	Low mood, B	30 mg a day. Toxic above 5 g	Bleeding, abortion at high dose [VERIFY]	Autumn crocus, safflower
15	*Glycyrrhiza glabra*, root	Decoction, chewed root	Dyspepsia, cough, C. Long use, X	3-8 g a day, at most 4 weeks. Long use under 2.5 g	Pseudoaldosteronism, low potassium	*Abrus precatorius* root

#	Plant, part	Preparation	Use and grade	Dose	Harms	Lookalikes, confusions
16	*Origanum vulgare*, *O. syriacum*, herb	Food, tea	Digestion, C. Oil for gut parasites, D	3 cups of tea a day (EDA)	Oil burns and poisons children	*Thymbra*, *Satureja*, all usable
17	*Punica granatum*, root and stem bark	Decoction	Tapeworm, B (old record). Today X unless nothing else	Not given here for household use. See section 5	Pelletierines: paralysis, death above about 80 g	None
18	*Lawsonia inermis*, leaf	Paste	Dye. Medicinal uses, D	None as medicine	Fatal haemolysis in G6PD-deficient infants	"Black henna"
19	*Drimia maritima*, bulb (squill)	Vinegar, oxymel, tincture	Cough, C. Heart failure, X at household level	Dried bulb 60-200 mg 3 times daily, at most 500 mg a day, prescription only	Cardiac glycoside death	Other bulbs, onions
20	*Citrullus colocynthis*, fruit pulp	Powder	Purgative, X. Diabetes, D	Therapeutic 0.1-0.3 g. Toxic 0.6-1 g. Lethal from 2 g	Bloody colitis, kidney failure, death	Wild melons, edible watermelon
21	*Ruta graveolens*, *R. chalepensis*, herb	Infusion	Abortion, X. Every other use, X at household level	No safe dose given	Organ failure, deaths, sun burns	None

3. The seven named first

3.1 Olive, *Olea europaea*: leaf and oil

The tradition. Olive oil is food, lamp fuel, the base of every salve and the vehicle of most Mediterranean medicine. The leaf, boiled, was given for fever and water retention.

The record. The oil's strongest evidence is as food. PREDIMED randomised 7,447 Spaniards at high cardiovascular risk to a Mediterranean diet with extra-virgin olive oil, one with nuts, or a low-fat control. Retracted and republished in 2018 over flawed allocation at some sites, its result held: about 30 per cent fewer major cardiovascular events in the olive oil arm, hazard ratio 0.70 (Harvard Nutrition Source 2018, secondary) [VERIFY]. That is grade A for a dietary pattern, not for a spoonful. For the leaf, an Indonesian trial compared extract EFLA 943 at 500 mg twice daily with captopril for 8 weeks in stage 1 hypertension. Systolic pressure fell 11.5 mmHg on the leaf and 13.7 on captopril, not significantly different (Susalit 2011). Sample sizes differ between accounts and the maker funded it [VERIFY]. Grade B for that extract.

The monographs. The EMA grants leaf only traditional use, for mild water retention: 5 g dried leaf simmered in 150 ml water down to 100 ml, twice daily, not under 18, not in pregnancy, never where fluid is restricted in heart or kidney failure (EMA HMPC 2017). The EDA repeats this and adds oil by mouth, 15 ml each morning for gastritis and 30 to 60 ml a day as a laxative (EDA 2026). A household leaf tea is not the extract, and its strength is unknown. Grade D for the tea.

3.2 Myrrh, *Commiphora myrrha*: mouth and wound

The tradition. Myrrh was embalming resin in Egypt, a wound dressing for the Greeks, mo yao in China and a gum remedy everywhere between. Dioscorides gave it for the mouth and gums, for wounds and as a warming drug [VERIFY, secondary].

The monograph. The EMA grants traditional use only, for mild inflammation of the mouth and throat and for small wounds and boils, as a 1:5 tincture in 90 per cent ethanol: 0.5 to 5 ml in 150 ml water as a rinse three times daily, or undiluted on a cotton bud two to three times daily. Not under 12, not in pregnancy, for at most a week (EMA HMPC 2011). Allergic skin reactions are reported. A practitioner source gives 5 to 10 drops in a glass as a gargle and 30 to 60 drops as a mouthwash, roughly 0.25 to 3 ml, the low end of the EMA range (Acupuncture Today, undated).

The record against. Myrrh was tested hard once, and failed. An Egyptian extract, Mirazid, was marketed for schistosomiasis. In 1,131 schoolchildren and household members, it cured 9.1 per cent of children and 8.9 per cent of adults, against 62.5 and 79.7 per cent on praziquantel (Botros 2005). A second trial of 104 people found cure of 8.9 to 15.6 per cent against about 75, and praziquantel then cured 32 of the 34 myrrh failures (Barakat 2005). A later phase 3 trial posted no results (ClinicalTrials.gov NCT01529710). Grade X for worms, C for the mouth.

3.3 Frankincense, *Boswellia sacra* and *B. serrata*

The tradition. Frankincense from Dhofar and Somaliland (*B. sacra*, *B. carteri*) and Indian olibanum (*B. serrata*) were burned, chewed for the mouth, and given for joints and lungs. Unani calls it kundur.

The record. The evidence belongs to Indian extracts of *B. serrata*, not the Arabian resin. Seven trials with 545 patients with knee osteoarthritis found extracts cut WOMAC pain by 14.2 points and improved function by 10.8 after at least four weeks (Yu 2020). TR-02 lists *B. serrata* among the strong B evidence (THRIVING library, TR-02). This report grades the standardised extract A on this pooled randomised evidence, and raw resin D. The EDA gives raw resin at 1 to 3 g a day and extracts at 300 to 400 mg three times daily with food, not in gastritis (EDA 2026). In 75 Iranian schoolgirls with gingivitis, all groups improved over 14 days and the abstract does not separate frankincense cleanly from placebo (Khosravi Samani 2011) [VERIFY]. Grade C for gums.

Inference. Boswellic acids, chiefly AKBA, inhibit 5-lipoxygenase. There is no trial of *B. sacra*, which a Gulf reader is more likely to hold. Treat it as D until tested.

3.4 Pomegranate, *Punica granatum*: rind, root bark and their alkaloids

The tradition. The rind is the region's standard astringent, boiled for diarrhoea and dysentery, as a gargle and for piles. The root and stem bark expelled tapeworm, an Indian use known to Europe from 1807 (Felter 1922).

The rind, record and inference. The rind is rich in ellagitannins (EDA 2026). IN-11 graded it D for infectious diarrhoea, finding no useful human trial (THRIVING library, IN-11). One trial IN-11 did not have has since appeared: 62 Iranian adults with irritable bowel syndrome and diarrhoea took 250 mg peel extract capsules twice daily for 8 weeks, and pain, diarrhoea and quality of life improved over placebo, while bloating and faecal calprotectin did not (Faghieh Dinavari 2025, abstract only). In ulcerative colitis, 6 g of dry peel a day as an aqueous extract gave a clinical response of 41.4 per cent against 18.2 per cent at week 4, not significant (P = 0.055), and the difference was gone by week 10 (Complementary Therapies in Clinical Practice 2015, abstract only) [VERIFY authors]. So the rind earns

B for one extract in IBS-D and stays D for dysentery, and must never displace oral rehydration solution. The EDA, citing the WHO, gives 2.5 to 4.5 g of peel a day in divided doses and advises against it for children (EDA 2026).

The root bark, the record. The pre-antibiotic record is real and frightening. King's Dispensatory of 1898 gives decoctions of 2 to 8 oz of bark, taken in divided doses between a purge and an enema, and the isolated alkaloid pelletierine at 5 to 23 grains. One woman was temporarily paralysed after 5 grains (King's 1898). Felter lists vomiting, tremor, double vision, wide pupils and motor paralysis, and notes that an 1884 paper found failure common (Felter 1922). The EDA, from the WHO and the PDR, gives 3 to 9 g of bark as a decoction, larger amounts for tapeworm between laxatives, and warns that over 80 g causes collapse and death (EDA 2026). The Hong Kong toxic plant database lists root, bark and peel as poisonous (Hong Kong Hospital Authority, undated). The doses in these sources differ tenfold, which is itself the warning. Grade B for expelling tapeworm, with a narrow and poorly measured margin. It is a district remedy only, given after weighing, never a household one.

3.5 Black seed, *Nigella sativa*

The tradition. Called habbat al-baraka, the seed of blessing, it carries a saying attributed to the Prophet that it cures everything but death, and it is the emblem of Prophetic medicine. Dioscorides knew the plant as melanthion and gave it for headache, catarrh and worms [VERIFY, secondary].

The record. The trials are many, small and mostly from the region itself. On glucose, 50 trials found fasting glucose 15.2 mg/dl lower and HbA1c 0.45 points lower (Hallajzadeh 2020, abstract only), in line with TR-04's grade B (THRIVING library, TR-04). On blood pressure, systolic fell 3.3 mmHg and diastolic 2.8 (Sahebkar 2016, secondary) [VERIFY], real but small. In 80 Saudi asthmatics, oil capsules of 500 mg twice daily for 4 weeks improved asthma control scores but not lung function significantly (Koshak 2017). Grade C for asthma.

The monographs. No EMA monograph exists. The EDA gives powdered seed at 2 to 3 g a day for 3 months for glucose, and oil at 5 ml a day, doses taken from the trials themselves (EDA 2022). The oil is contraindicated in pregnancy and breastfeeding. Oil on the skin causes allergic dermatitis (MSKCC, undated). It adds to blood sugar drugs, so a diabetic on salvaged tablets may fall too low.

3.6 Mastic, *Pistacia lentiscus* var. *chia*

The tradition. The resin of the lentisk of southern Chios, "the tears of Chios", has been chewed for the stomach, the breath and the gums since Dioscorides [VERIFY, secondary], and was a monopoly of the island's mastic villages under the Genoese and Ottomans.

The monograph. The EMA grants traditional use for mild dyspepsia, 0.5 to 1 g of powdered resin twice daily, adults only, and for minor skin inflammation as a 9 to 11 per cent semi-solid preparation, not under 12. Austria, Denmark and Germany dissented, doubting the evidence and the dose (EMA HMPC 2016).

The record. In 38 patients with duodenal ulcer, 1 g a day for 2 weeks healed 70 per cent against 22 on placebo by endoscopy (Al-Habbal 1984, secondary sources). In 148 patients with functional dyspepsia, 350 mg three times daily for 3 weeks beat placebo (Dabos 2010b). The same group randomised 52 patients with H. pylori into four arms of 13: eradication was 4 and 5 of 13 on two mastic doses, none of 13 on mastic with pantoprazole, and 10 of 13 on triple therapy (Dabos 2010a, ISRCTN01756929). Two small studies found no eradication (Bebb 2003, Loughlin 2003, secondary) [VERIFY], though it kills the bacterium in a dish (Marone 2001). Grade B for dyspepsia and duodenal ulcer, on one trial each. Grade X for curing H. pylori. The trial doses of about 1 g a day sit inside the EMA range.

3.7 Oregano, *Origanum vulgare* and za'atar

The tradition. Oregano, Syrian oregano (*O. syriacum*, the za'atar of the Levant and Sinai), savory and thyme-leaved *Thymbra* are eaten daily and drunk as tea for the stomach, cough and worms. The EDA allows *O. syriacum* only

traditional use for stomach and digestive troubles, three cups a day of the boiled leaves (EDA 2026).

The record. One uncontrolled study gave 14 adults with gut parasites 600 mg a day of emulsified oregano oil for 6 weeks: *Blastocystis* cleared in 8, *Entamoeba hartmanni* in 4 and *Endolimax nana* in 1 (Force 2000). None of these is a serious pathogen, there was no control, and it has not been repeated. Grade D for parasites.

The harm. The oil is mostly carvacrol and burns skin and mucosa undiluted. No oregano-specific child poisoning series was found, but small amounts of camphor and eucalyptus oils have caused seizures and coma in children (Flaman 2001) [VERIFY]. The herb is food and C for digestion. The oil has no place in a household with children. Thyme, the better-evidenced cousin, is in PH-01.

4. The second tier

Senna, *Senna alexandrina*. Not in Dioscorides. It reached European medicine through the Arabic physicians [VERIFY]. It is the region's grade A drug for constipation (THRIVING library, TR-04, citing a 2021 review of 41 trials). The EMA, on well-established use, gives 10 to 30 mg of hydroxyanthracene glycosides once at night, the smallest dose that works, for at most a week, over 12 only (EMA HMPC 2018). The EDA allows 15 to 30 mg once or twice daily and child doses from age 2 (EDA 2026). This report follows the EMA. Leaf holds at least 2.0 to 2.5 per cent glycosides by pharmacopoeia limit (Sena 2022), so 1 g of dried leaflet gives roughly 20 to 25 mg [VERIFY, my inference]. Never in obstruction, inflammatory bowel disease, unexplained abdominal pain, dehydration, pregnancy or breastfeeding. It drops potassium, so it is dangerous with digoxin, diuretics, steroids and liquorice (EMA HMPC 2018). Of about 90 young children who swallowed senna laxatives, 10 developed nappy-area blisters and skin sloughing a mean 14.5 hours later, a lesion that can be mistaken for scalding or abuse (Spiller 2003).

Aloe, *Aloe vera*: two drugs. The clear inner gel and the yellow latex beneath the rind are different medicines. On burns, four studies with 371 patients found gel healed them 8.8 days faster, from low-quality trials (Maenthaisong 2007), and a Cochrane review found no high-quality evidence (Dat 2012). On open surgical wounds it slowed healing, 83 days against 53 in 21 women (Schmidt and Greenspoon 1991). Grade B for superficial burns, X for deep open wounds. The latex is a harsher stimulant laxative than senna, and non-decolourised whole-leaf extract caused colon tumours in rats (NTP 2013). Its limits are in PH-06 (THRIVING library, PH-06). Where senna grows, latex has no place.

Liquorice, *Glycyrrhiza glabra*. PH-08 analyses it in detail (THRIVING library, PH-08). The EMA allows 3 to 8 g of root a day for dyspepsia and up to 13.5 g as an expectorant, for at most 4 weeks. Glycyrrhizin makes the kidney hold salt and lose potassium. Food authorities cap glycyrrhizin at about 100 mg a day, roughly 2.5 g of strong root, and more than 80 per cent of Japanese patients over 60 taking 6 g of liquorice a day for over 30 days developed pseudoaldosteronism (Yoshino 2021, cited in PH-08). Never for long use, nor in hypertension, heart, kidney or liver disease, pregnancy, or with senna, diuretics or digoxin. The lookalike that kills is *Abrus precatorius* (THRIVING library, PH-10).

Fenugreek, *Trigonella foenum-graecum*. The EMA grants traditional use for poor appetite (1 to 2 g of seed three times daily) and, as a warm poultice of 50 g powdered seed in 250 ml water two to three times daily, for local skin inflammation (EMA HMPC 2021). The EDA agrees (EDA 2023). Not under 18, not in pregnancy, nor in women who could conceive, because of reproductive toxicity in animals. Not in legume or peanut allergy. It lowers blood sugar. Grade C for boils, D for appetite.

Rosemary, *Salvia rosmarinus*. Traditional use for dyspepsia, 1 to 2 g in 150 to 250 ml two to three times daily for up to 2 weeks. Not under 12, not in pregnancy, and not by mouth with gallstones, bile-duct obstruction or liver disease (EMA HMPC 2024). Grade C.

Lavender, *Lavandula angustifolia*. Tea at 1 to 2 g in 150 ml three times daily for mild stress and sleep, not under 12 (EMA HMPC 2012). The strong evidence belongs to one product: Silexan, an 80 mg oil capsule, beat placebo

for anxiety across five trials with 1,213 outpatients (Kasper 2023), though most trials carry high risk of bias and the maker's funding (Donelli 2019). Grade A for Silexan, D for the tea. Three boys who grew breasts while using lavender and tea tree products, resolving on stopping, are a hypothesis only, but a reason not to rub oils on children daily (Henley 2007).

Anise, *Pimpinella anisum*. Crushed fruit 1 to 3.5 g in 150 ml three times daily for wind, cramp and cough, at most 2 weeks, not under 12 (EMA HMPC 2013). The EDA also gives infant doses from an older German source (EDA 2026), a disagreement this report resolves for the EMA. The real danger is star anise. In 2003 the US FDA linked star anise teas to illness in about 40 people, 15 of them infants, with seizures and abnormal eye movements, because Chinese star anise is contaminated with Japanese star anise (*Illicium anisatum*), indistinguishable once dried (FDA 2003, Ize-Ludlow 2004). No star-shaped anise for infants, ever. Grade C for true aniseed.

Saffron, *Crocus sativus*. At about 30 mg a day saffron lifts depression against placebo with large effects, g = 0.99 across 23 studies (Marx 2019, Hausenblas 2013). But 21 of the 23 were Iranian, 13 from one group by a secondary account, and publication bias was found (Marx 2019) [VERIFY]. Grade B. Under 1.5 g a day is regarded as non-toxic, over 5 g toxic, and about 20 g possibly lethal (Moshiri 2015) [VERIFY]. The deadly confusion is autumn crocus, *Colchicum autumnale* (THRIVING library, PH-10).

Carob, *Ceratonia siliqua*. In Izmir, 80 children aged 4 to 48 months with acute diarrhoea were randomised to oral rehydration solution with or without carob bean juice. With carob, diarrhoea lasted 45 per cent less, stool output fell 44 per cent and ORS needed fell 38 per cent, without harm (Aksit 1998, abstract only). One trial, and the juice method was not read. Grade B as an addition to ORS, never a substitute.

Henna, *Lawsonia inermis*. Lawsone, its dye, damages red cells as naphthalene does. In the United Arab Emirates, four G6PD-deficient children had haemolytic crises after henna in one year, and one infant died despite transfusion (Raupp 2001). A Sudanese boy of 6 reached haemoglobin 4 g/dl after henna for a school ceremony (Kheir 2017). G6PD deficiency is common across the region. Grade D as medicine. Never on infants, nor on anyone who has had dark urine after fava beans or henna.

5. The plants that kill at household doses

Rue, *Ruta graveolens* and *R. chalepensis*. Rue was the classical abortifacient and a charm against the evil eye. At the Montevideo poison centre from 1986 to 1999, 86 women took herbal infusions to end a pregnancy, rue most often. All had gut symptoms, 14 had organ failure or sepsis, and 5 died (Ciganda and Laborde 2003, secondary source) [VERIFY]. The EMA veterinary committee records human deaths after oil or extract taken for abortion (EMA CVMP undated). A woman of 78 who drank a rue decoction for three days developed slow heart rate, kidney failure and a clotting disorder, needing dialysis (PMC10310220). In sun, the sap raises linear blisters and lasting stains (Heskel 1983, secondary) [VERIFY]. No harmful dose was found in any source. Grade X. Never in possible pregnancy, never gathered bare-armed in sun.

Squill, *Drimia maritima*. The sea onion was the classical expectorant and diuretic, given as vinegar and oxymel, and red squill was a rat poison. Its bufadienolides act like digitalis. It is still licensed: a British cough mixture holds 0.6 ml of squill tincture in each 5 ml, contraindicated in heart disorders (Covonia SmPC). The EDA lists dried bulb at 60 to 200 mg three times daily, at most 500 mg a day, prescription only, and not in heart block, low potassium or pregnancy (EDA, undated). A Turkish woman of 55 who ate two bulbs for arthritis had seizures, high potassium and heart block, and died 30 hours later (Tuncok 1995, secondary source). A Persian squill oxymel at 10 ml twice daily for 6 weeks improved lung function in asthma, with mild nausea (Nejatbakhsh 2017). A household cannot weigh 200 mg, and two bulbs kill. Grade C for cough, X at household level. Never with heart disease, digoxin, diuretics, senna or liquorice, in pregnancy or in children (THRIVING library, TR-15).

Colocynth, *Citrullus colocynthis*. The bitter apple of the deserts, handal, was the strongest purgative of the classical and Arabic dispensary. The EDA still lists it at 0.1 to 0.3 g of dried pulp, toxic at 0.6 to 1 g with bloody diarrhoea

and kidney injury, and lethal "starting at 2 g" (EDA 2026). At Najran, five men took handal for constipation, diabetes or "cleaning the body". Bloody diarrhoea began 8 to 12 hours later, one needed 6 litres of intravenous fluid, and all recovered (Khan 2003). The authors state, without a reference, that 1.5 teaspoons of powder has killed [VERIFY], which at perhaps 2 to 3 g a teaspoon fits the EDA threshold [VERIFY, my inference]. Three cases of toxic colitis were described in Gut (Goldfain 1989). One Iranian trial in 50 type 2 diabetics used 100 mg three times daily (Huseini 2009) [VERIFY]. The margin between the dose that works and the dose that bleeds is a factor of six. Grade X. Never in a household.

Pomegranate root bark is in section 3.4. Oleander, the commonest dangerous confusion in the region, is in PH-10 (THRIVING library, PH-10).

How the error is recognised. Each poison announces itself in a set way. - Cardiac glycosides (squill, oleander): vomiting within hours, then a slow or irregular pulse, yellow or green halos in vision, confusion. Count the pulse for a full minute. - Cucurbitacins (colocynth): cramping and bloody diarrhoea in 3 to 12 hours, then reduced urine. - Pelletierines (pomegranate bark): dizziness, double vision, wide pupils, trembling, then weakness of the limbs. - Rue: vomiting, bleeding from the womb, jaundice, little urine, over a day or two. - Anthranoids (senna, aloe latex): cramps and watery stools, then weakness from lost potassium, and in a nappy-wearer, blisters by the next day. - Glycyrrhizin (liquorice): swollen ankles, headache, weak legs after weeks. - Lawsone (henna): pallor, yellow eyes and tea-coloured urine one to three days after application. - Anisatin (Japanese star anise): an infant who jerks, vomits or has wandering eyes after a colic tea.

6. Resins and oils: yields and preparation

Mastic. Trees yield from year 5 or 6. From early summer the bark is scored weekly with a sharp tool, 20 to 100 cuts per tree, and the tears fall onto swept ground dusted with white earth, harvested from mid-August (Gum Mastic Growers Association, undated). Yield is 150 to 180 g per tree a year (Land 2025) or 200 to 250 g (OT.gr 2023). Lentisk outside southern Chios yields little [VERIFY]. The tears are cleaned by hand and chewed or ground in a cold mortar.

Frankincense. In Dhofar the bark of *B. sacra* is shaved about 1 mm deep, nine to eleven times a year at intervals of 14 to 23 days, never in the monsoon (Al Amri 2012). A 2025 study of 180 trees found 360 to 650 g per tree per season over ten tappings (AIJR 2025). A review's national figure of about 6 g per tree cannot be reconciled with this and probably counts untapped trees (PMC6005567) [VERIFY]. Over-tapping kills trees, so rest each tree in alternate years [VERIFY, my inference]. Standardised extraction is beyond any rung below the hospital.

Myrrh. No yield figure was found. The resin exudes from wounds in *Commiphora* bark and hardens in air. The EMA tincture uses 90 per cent ethanol at 1:5 (EMA HMPC 2011), stronger than ME-01's default of 60 to 70 per cent for resins (THRIVING library, ME-01). This report prefers the EMA figure for myrrh, because its resin needs the strength.

Olive oil. A kilogram of olives gives 15 to 20 per cent oil by mill (Excelentes Precios, undated) and 9 to 15 per cent by home pressing, about 10 kg to the litre (Treading My Own Path 2022). For medicine it must be fresh and kept dark. Infused oils follow ME-01: dried herb only, never fresh garlic or green herb in kept oil (THRIVING library, ME-01).

Essential oils. Do not make them for internal use below the district. A teaspoon is a child's lethal dose and a household cannot measure the drop.

7. Dioscorides against the record, and what Unani added

Dioscorides' uses below come from secondary accounts, and the book references could not be checked in Beck [VERIFY for each].

Classical claim	Clinical record	Verdict
Myrrh for mouth, gums and wounds	Traditional use accepted by EMA, no good trial	Survives, C
Mastic for stomach and gums	Two small RCTs, dyspepsia and ulcer	Survives, B
Pomegranate rind binds the bowel	Animal data, one IBS-D trial, nothing in dysentery	Unproven, D for infection
Pomegranate root expels worms	Pre-antibiotic record of success and frequent failure	Survives, B, toxic
Aloe heals wounds, purges	Gel helps burns, slows deep wounds. Latex purges, carcinogenic in rats	Half survives
Colocynth purges	It does, and kills	Effect true, use X
Squill vinegar for cough and dropsy	Glycoside pharmacology, one oxymel trial, deaths	Effect true, use X at home
Rue as antidote, and to end pregnancy	Kills women	X
Saffron for the eyes, mood and childbirth	Mood trials positive but Iranian and biased	B for mood only

What Unani added that can be tested. 1. Senna, the region's only grade A purgative [VERIFY], a gentler choice than colocynth or hellebore. 2. Black seed, raised from a minor remedy to the blessed seed, now with 50 trials on glucose. The tradition was right that it does something, wrong that it does everything. 3. The oxymel, with its own squill trial (Nejatbakhsh 2017) and a sound preserving base (THRIVING library, ME-01). 4. Ibn Sina's rules for testing drugs, which this report tries to apply (THRIVING library, TR-04). 5. The market inspector (muhtasib) and the manuals of adulteration. Mastic cut with terebinth and saffron with safflower are the same frauds today [VERIFY].

What Unani did not add is a testable theory of temperament. A review of 151 trials of Iranian traditional medicine from 2010 to 2017 found methodology did not improve as their number grew (Iranian traditional medicine trial quality review) [VERIFY].

8. Five plants a dry-climate village should grow first

1. **Olive.** Food fat, salve base, lamp oil, and leaf for a cheap pressure tea. Lives for centuries on dry ground.
2. **Senna.** A perennial of hot dry soil that gives the region's one grade A drug. A healer must still weigh it.
3. **Carob.** Drought-proof, feeds people and goats, and adds to ORS in the commonest killer of children.
4. **Aloe vera.** Grows in a pot on a wall, gives gel for burns on the spot, and needs no preparation. The latex must be scraped away and never used.
5. **Pomegranate.** Fruit, a rind for gargles and IBS, and at the district the old taenifuge.

Next in line: thyme and sage from PH-01, which do the work oregano is asked to do with better evidence, and black seed sown each spring for diabetics. Mastic trees are worth planting only where they are known to yield. Squill, rue, colocynth and oleander should be pulled from house gardens where children play, as TR-15 also advises (THRIVING library, TR-15).

Evidence grades

Grade	Uses
A	Senna for constipation. Olive oil within a Mediterranean diet for cardiovascular events. *B. serrata* extract for knee osteoarthritis. Silexan lavender capsule for anxiety
B	Mastic for dyspepsia and duodenal ulcer. Black seed for fasting glucose. Olive leaf extract in mild hypertension. Aloe gel on superficial burns. Carob juice with ORS. Saffron for low mood. Pomegranate peel extract in IBS-D. Pomegranate root bark for tapeworm
C	Myrrh for mouth and small wounds. Frankincense for gums. Black seed for pressure and asthma. Anise, rosemary, liquorice for dyspepsia and cough. Fenugreek poultice. Oregano tea for digestion. Squill for cough (at a weighed dose)
D	Olive leaf tea. Pomegranate rind in dysentery. Oregano oil for parasites. Raw *B. sacra*. Lavender tea for sleep. Henna as medicine. Colocynth for diabetes
X	Mastic to cure H. pylori. Myrrh for schistosomiasis. Aloe gel in deep wounds. Aloe latex where senna exists. Long-term liquorice. Colocynth as a purgative. Rue for any use. Squill and pomegranate root bark in a household. Essential oils by mouth for children

Separating the three: the tradition claims an action for all 21. The record supports about a third of them at A or B, nearly all for one preparation tested in one or two countries. Modern inference supplies a mechanism for most of the rest. The record contradicts the tradition outright in four places: mastic for H. pylori, myrrh for worms, aloe in deep wounds and rue for anything.

Means ledger

Rung	What it can do	What it changes
Hands	Know the poisons by sight. Split aloe onto a burn. Refuse colocynth, rue, and henna on infants	Removes most deaths, which come from giving the wrong thing
Hearth	Anise and rosemary teas, olive leaf decoction, carob juice with ORS, fenugreek poultice, rind gargle	Delivers every grade C use and the carob B
Garden and still	Myrrh tincture, mastic salve, a scale to 0.1 g	Turns senna from a guess into 10 to 30 mg. The scale is the most important tool here
Village dispensary (300)	A senna register, a G6PD history by family, ORS stock, a pulse watch	Catches potassium loss, henna haemolysis and the purgative given in diarrhoea

Rung	What it can do	What it changes
District (3,000)	Weighed bark for proven tapeworm, squill by a trained hand, intravenous fluid, a poisons record	The only rung where bark and squill may be given, and where remedies can be tested
Hospital before the Fall	Triple therapy, praziquantel, standardised Boswellia, potassium assay, dialysis	Cures H. pylori (10 of 13 in Dabos 2010a) and schistosomiasis (63 to 80 per cent). Neither can be rebuilt below it

Harm test

How they kill. Through the gut: colocynth and aloe latex by bloody colitis and fluid loss, senna by potassium loss. Through the heart: squill and oleander. Through the womb: rue. Through the blood: henna in G6PD deficiency. Through salt balance: liquorice. Through the nerves: pomegranate bark and Japanese star anise. Through the skin: rue in sun, neat oregano oil, senna in nappies.

The harmful dose. Senna: over 30 mg sennosides a night, over a week, or any dose in obstruction or dehydration (EMA HMPC 2018). Liquorice: over about 100 mg glycyrrhizin (2.5 g root) a day for weeks (THRIVING library, PH-08). Rue: no safe dose, and abortion infusions killed 5 of 86. Squill: over 500 mg dried bulb a day (EDA), and two bulbs killed. Colocynth: toxic from 0.6 g, lethal from 2 g (EDA 2026). Pomegranate bark: over about 80 g (EDA 2026), and 5 grains of pure alkaloid paralysed one woman (King's 1898).

Who must never receive them. Pregnant women: rue, squill, colocynth, senna, aloe latex, fenugreek, pomegranate bark, Nigella oil. Infants and children: henna, star anise, essential oils, senna under 12, colocynth, squill, bark, rue. The dehydrated: every purgative. Heart disease, digoxin or diuretics: squill, liquorice, senna, aloe latex. G6PD deficiency: henna.

Misidentification. Autumn crocus as saffron, Japanese star anise in star anise, *Abrus* for liquorice, oleander for bay, *Nigella damascena* for black seed, terebinth sold as mastic, "black henna" with synthetic dye. The three-confirmation rule of PH-10 applies to every gathered plant (THRIVING library, PH-10).

Warning signs are listed at the end of section 5.

What to do. Stop the remedy. After any purgative, give ORS (1 litre clean water, 6 level teaspoons sugar, half a level teaspoon salt) in frequent sips and count urine. For a plant swallowed within the hour by an awake patient, activated charcoal, 50 g for an adult or 1 g per kg for a child (THRIVING library, PH-10). For glycosides, keep the patient lying still, count the pulse and go to the district (THRIVING library, ME-14). For henna, wash it off and give fluids. For senna blisters, stop the laxative and record it so the family is not accused.

Historical cases. Najran colocynth (Khan 2003), Montevideo rue (Ciganda and Laborde 2003), the Turkish squill death (Tuncok 1995), the Emirati henna death (Raupp 2001), the US star anise infants (FDA 2003) and the senna blisters (Spiller 2003), all in sections 4 and 5.

Red flags

Each means the district, now. - Bloody diarrhoea with fever in a child under 5, or in anyone after colocynth. ORS without stopping. No rind, no purgative. - A slow or irregular pulse, or yellow vision, after squill, oleander or any bulb. Lie still, charcoal. - Bleeding from the womb with fever, jaundice or little urine after an abortion infusion. Fluids, warmth, and no blame. - Tea-coloured urine and pallor in a child after henna. Wash it off, fluids. - Seizures in an infant after a colic tea. On the side, nothing by mouth. - Black stools or coffee-ground vomit in someone using

mastic for an ulcer. - Weak legs and palpitations after weeks of liquorice or senna. Stop both, give ORS and dried apricots or lentils [VERIFY food potassium]. - Double vision, wide pupils or weak limbs during a bark cure. Stop.

When the district cannot be reached and a heart poison is taking hold, nothing here reverses it. Keep the person warm, still and accompanied, give sips of water, and stay. Many survive with rest alone, and none should die alone.

The case against

The critics. Edzard Ernst, the first professor of complementary medicine at Exeter, argued for two decades that most herbal claims rest on tradition rather than trials, that traditional herbalism has "no good evidence that it works", and that the few well-tested extracts do not license the rest (BMJ news 2007, Ernst's work summarised through secondary sources). The Iranian trial-quality review found that 51 per cent of 151 Persian medicine trials carried moderate risk of bias and that methodology did not improve over eight years [VERIFY]. Marx and colleagues named the saffron literature's problem directly: almost all Iranian, many from one group, with publication bias (Marx 2019). The three EMA member states that dissented on mastic doubted that its traditional use had even been shown (EMA HMPC 2016).

The region's own record. Mirazid, a national product from the region's oldest resin, promoted for its commonest worm, cured fewer than one in ten against eight in ten for praziquantel (Botros 2005, Barakat 2005). Mastic, with a real effect on dyspepsia, did nothing for the infection behind most ulcers (Dabos 2010a). Aloe slowed open wounds by a month (Schmidt and Greenspoon 1991). The tradition kept colocynth, rue and squill alongside its good drugs, with no way of telling which was which.

The other side. Senna and squill are still licensed medicines in Europe. Old does not mean safe, and modern does not mean replaceable. After the Fall the region keeps four grade A drugs and loses every antibiotic, so its people will need the B and C plants, and this table to keep the X plants out of the pot. This report's own weakness: many figures come from abstracts and secondary sources, marked, and Dioscorides could not be read.

10-line summary

1. Senna is the region's one indispensable grade A drug: 10 to 30 mg sennosides at night, at most a week, never in pregnancy, obstruction or dehydration.
2. Mastic helps dyspepsia and duodenal ulcer at about 1 g a day (grade B) but does not cure H. pylori (X).
3. Black seed lowers fasting glucose modestly (B) and blood pressure by about 3 mmHg (C), in small, single-country trials.
4. Frankincense evidence belongs to standardised *B. serrata* extract for knee arthritis (A), not to raw Arabian resin (D).
5. Myrrh tincture is a reasonable mouth rinse (C) and a proven failure against schistosomiasis (X).
6. Pomegranate rind is an astringent with one IBS-D trial (B) and nothing in dysentery (D). It never replaces ORS.
7. Carob juice with ORS shortened child diarrhoea by 45 per cent in one trial (B). It is the region's most valuable food medicine.
8. Aloe gel helps superficial burns (B) and slows deep wounds (X). Aloe latex is a carcinogenic laxative where senna is better.
9. Colocynth, rue, squill and pomegranate root bark kill at household doses. Colocynth bleeds from 0.6 g and kills from 2 g.
10. Henna kills G6PD-deficient infants, and star anise tea poisons them. Neither goes near a baby.

Open questions

- Does raw *B. sacra* resin do anything for joints or gums? No trial exists.

- What is the real therapeutic dose of mastic: 1 g a day, as two trials and the EMA agree, or 2 g, as one registry says?
- Can a village weigh pomegranate bark well enough to use it, and how often did the old method fail? The 1884 failure rate was not read.
- Is the fatal colocynth dose of 1.5 teaspoons a measured case or a repeated assertion?
- Will saffron's depression result survive trials outside Iran?
- Does carob juice help in cholera-like watery diarrhoea in adults? No trial was found.
- Is any pomegranate rind preparation useful in bloody dysentery when antibiotics are gone?
- How many of Dioscorides' 600-odd plants have ever been tested at all? No count was found.

Sources to read in full

1. Beck (2005), Dioscorides in English, not read here.
2. Riddle (1985) and Pormann and Savage-Smith (2007), for the two traditions.
3. The EMA monographs and assessment reports on mastic, myrrh, senna and olive leaf.
4. The EDA collected monograph (2026), the only regulator's text on colocynth, squill, pomegranate and Nigella.
5. Dabos (2010a, 2010b) and Al-Habbal (1984) on mastic, Botros (2005) and Barakat (2005) on myrrh.
6. Khan (2003) on colocynth and Ciganda and Laborde (2003) on rue.

At the bedside after the Fall

A household. To start: olive oil, an aloe plant, dried anise or rosemary, senna weighed into papers by the dispensary, mastic tears, carob pods and the ORS recipe. It must know which child has had dark urine after fava beans or henna. First failure to expect: a grandmother gives colocynth or senna to a child with diarrhoea "to clean the bowel", or henna to a newborn.

A village of 300. To start: the five plants of section 8, a scale reading to 0.1 g, 90 per cent alcohol, beeswax, labelled jars, ORS stock, and a lay healer who can count a pulse for a full minute and refuse a purgative to the dehydrated. Records: every senna dose, every bout of diarrhoea, a G6PD list by family. First failure to expect: liquorice and senna given together for weeks to an old man with swollen ankles, until his legs fail.

A district of 3,000. To start: a poisons record, any intravenous fluid, bark weighed by lot, a microscope to see tapeworm eggs before any bark is given, salvaged atropine, and someone able to compare two mastic lots or senna doses and record outcomes. First failure to expect: a bark cure given on a guess, without eggs seen, to someone who had no tapeworm and now cannot see straight.

Protocols

These are the four preparations a Mediterranean household uses most: the seed and leaf tea, the myrrh mouth rinse, the mastic dose and the seed poultice. The infusion and tincture method in ME-01 underlies them (THRIVING library, ME-01).

P1. Anise seed tea for wind, cramp and cough

- ☐ Check the seed is true aniseed: small, ridged, grey-green, oval, smelling of liquorice, on a carrot-family umbel. Never star-shaped pods. If anyone gathered it wild, apply the three-confirmation rule, because hemlock fruit is similar (THRIVING library, PH-10).
- ☐ Weigh 1 to 3.5 g of whole seed for one adult cup (a level teaspoon of aniseed weighs about 2 g [VERIFY]).
- ☐ Crush it in a mortar just before use.

- ☐ Pour on 150 ml of boiling water. Cover. Steep 10 to 15 minutes. The EMA gives 150 ml and the EDA 250 ml for 15 minutes, both acceptable.
- ☐ Strain. Drink warm, three times a day.
- ☐ Stop after 2 weeks. Seek the healer if fever, blood or weight loss appear.
- ☐ Not under 12 (EMA). The EDA allows infant doses, but this report keeps the EMA limit, because fennel at PH-01 doses is the safer colic remedy and star anise confusion is how infants are poisoned.
- ☐ Never in carrot-family allergy. Never the oil under 18.

- Rosemary tea for heavy digestion follows the same steps with 1 to 2 g of dried leaf in 150 to 250 ml, two to three times daily, at most 2 weeks, never with gallstones or liver disease or in pregnancy (EMA HMPC 2024).

P2. Myrrh tincture and mouth rinse

Making the tincture (garden and still rung). - [ ] Weigh 20 g of myrrh resin, broken small. - [ ] Measure 100 ml of 90 per cent ethanol (1:5). Lower strengths leave the resin undissolved. - [ ] Combine in a glass jar with a tight lid. Shake daily for 14 days, tolerance 10 to 21 days, out of the sun (THRIVING library, ME-01). - [ ] Strain through cloth. Stand 2 days. Decant from the gummy sediment. - [ ] Bottle in dark glass. Label: myrrh tincture 1:5, 90 per cent, date, maker. Keep 1 year, use within 2.

Using it. - [ ] For mouth ulcers or sore gums: put 0.5 to 5 ml (10 to 100 drops, about 20 drops per ml [VERIFY]) into 150 ml of clean water. Start at the low end. Rinse or gargle for 30 seconds and spit. Three times a day. - [ ] For a single ulcer: dab undiluted with a clean twist of cotton two to three times a day. - [ ] For a small clean wound or a small boil off the face: dab undiluted two to three times a day. Larger areas: dilute 1:1 with chamomile tea. - [ ] Not under 12. Not in pregnancy or breastfeeding. Keep from the eyes. - [ ] Stop after 7 days, or at once if the skin reddens and itches (allergy). - [ ] To the healer: a boil on the face, spreading redness, fever, or an ulcer past 2 weeks.

P3. Mastic for indigestion

- ☐ Use only true Chios mastic: pale yellow, glassy tears that soften to a white gum when chewed and taste of pine.
- ☐ Adult dose: 0.5 to 1 g twice daily, 1 to 2 g a day. A small tear weighs about 0.1 to 0.3 g [VERIFY], so weigh the first doses.
- ☐ Either chew the tears for 15 to 30 minutes and then swallow or discard the gum, or grind to powder in a cold mortar (it clogs when warm) and take with water before meals. Trial doses were 350 mg three times daily and 1 g a day, inside this range.
- ☐ Course: up to 2 weeks for indigestion, then stop and review. The ulcer trial ran 2 weeks.
- ☐ Not under 18 by the EMA.
- ☐ Do not rely on mastic to cure H. pylori or to stop a bleeding ulcer.
- ☐ Red flags: black stools, vomiting blood, weight loss, trouble swallowing, pain that wakes at night, age over 50 with new symptoms. Go to the district.

- For skin, a 10 per cent salve: melt 10 g powdered mastic into 90 g of warm olive oil and beeswax salve made by ME-01 P7, stir until even, use up to three times a day for a week, not under 12 [VERIFY that mastic dissolves in warm oil].

P4. Fenugreek seed poultice for a boil

- ☐ Weigh 50 g of fenugreek seed. Grind to a coarse powder.
- ☐ Mix with 250 ml of water. Boil gently for about 5 minutes, stirring, until a thick gruel forms (Altmeyers, undated, secondary). Or mix 50 g with just enough hot water for a paste (EDA 2023).
- ☐ Let it cool to warm, tested on the inside of the wrist. Never hot enough to burn.
- ☐ Spread 0.5 to 1 cm thick on a clean cloth. Lay on the boil, cloth side out. Cover and leave 30 to 60 minutes [VERIFY].

- ☐ Repeat two to three times a day (EMA, EDA) or three to four (Altmeyers), with fresh poultice each time.
- ☐ Wash the skin with boiled water between applications. Do not squeeze the boil.
- ☐ Not on broken skin over a large area. Not in peanut, soya or pea allergy.
- ☐ Stop and go to the healer if red streaks spread, fever comes, the boil is on the face or near the nose, or nothing changes in 3 days.

Numbers to carry

1. Senna: 10 to 30 mg sennosides at night, at most 7 days, never under 12, in pregnancy or the dehydrated.
2. Colocynth: works at 0.1 g, bleeds at 0.6 g, kills from 2 g. Do not use.
3. Squill: never more than 500 mg dried bulb a day, and two bulbs have killed.
4. Liquorice: under 100 mg glycyrrhizin, about 2.5 g of root, a day for long use, and never with senna.
5. Mastic: about 1 g a day for indigestion. It cures 0 to 5 in 13 of H. pylori.
6. Myrrh tincture: 1:5 in 90 per cent alcohol, 0.5 to 5 ml in 150 ml water as a rinse.
7. Carob with ORS: diarrhoea 45 per cent shorter. ORS is 1 litre water, 6 level teaspoons sugar, half a level teaspoon salt.
8. Pomegranate bark: above about 80 g kills. District only.
9. Henna and star anise: zero for infants.

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