Cardiac arrhythmia has many different functional and organic causes and may range from harmless paroxysmal tachycardia (that may still cause significant subjective complaints) to severe heart blocks that impair the system that conducts the nerve pulses. The latter blocks may require the implantation of a pacemaker. One of the peculiarities of digoxis glycosides is that they have a regulatory effect on arrhythmias, especially those associated with cardiac insufficiency, but cardiac arrhythmia is one of their most feared side effects. A large number of synthetic anti-arrhythmic drugs exist. In isolated cases, however, these drugs may have unreliable effects. Furthermore, they may trigger severe arrhythmias and are often accompanied by considerable side effects. Are there any viable herbal alternatives?

Hawthorn has a pharmacologically proven anti-arrhythmic effect. This special effect is only one part of hawthorn's overall profile, not a selective indication. This is not the case with broom (Sarothamnus scoparius), the most potent herbal anti-arrhythmic drug. Yellow jasmine (Gelsemium sempervirens) can also be classified as an herbal anti-arrhythmic drug. Although neither of these herbal drugs can be compared with the synthetic anti-arrhythmic drugs (especially since they are not recommended for emergency and acute therapy, for example, in intensive-care units), they are an effective alternative for treatment of benign forms of cardiac arrhythmias, especially in medical practice.

### Herbal Remedies

**Sarothamnus scoparius (Cytisus scoparius), Broom**

Broom is one of the most common and most beautiful plants in Germany's native flora. It grows mainly in heathlands and in arid pine forests, but also on sandy slopes and railway embankments. The stands of broom turn bright yellow in June. This brings to mind pictures of the beautiful Hiddensee or many other heathland landscapes that boast the spring splendor of vast broom-covered slopes. Broom bushes may become head-high and as dense as thickets. Lots of insects swarm around the plant’s large, yellow butterfly-shaped flowers.
The drug is derived from the whole plant (Sarothamni scoparii herba). Broom is not a member of the group of digitalis-like herbs, but has a special status. Unlike the digitalis-like herbs, it does not contain glycosides, but alkaloids. The best known alkaloid is sparteine, but over 20 others have also been identified. The drug contains no less than 0.8% alkaloids. The alkaloids are primarily located in the stem; they are also found in the epidermis and subepidermis of the other plant parts. The drug also contains flavonoids, isoflavones, coumarins, caffeic acid derivatives, and traces of a volatile oil. Lectins occur in the seeds.

**Pharmacology**

The medicinal action of the different alkaloids can be classified as sympathomimetic, vasoconstrictive, and hypertensive. The most extensive studies have to do with sparteine, an alkaloid which is classified as an anti-arrhythmic drug. Sparteine inhibits the transport of sodium ions across the cell membrane, thereby reducing overstimulation of the nerve impulse conduction system of the heart. Pathological change in the impulse arising in the atrium is also normalized. Unlike digitalis glycosides, sparteine does not have a positive inotropic effect, but still extends diastole. Broom is contraindicated in hypertension; it should also not be used during pregnancy, because it increases the tonicity of the gravid uterus. Since the efficacy of broom has not yet been sufficiently documented and verified, the Commission E issued a negative rating for the drug after a long and controversial debate.

**Indications**

Due to the negative rating issued by the Commission E, commercial broom preparations are listed as agents for functional heart and circulatory disorders in the Rote Liste, the official German drug index. Wichtl talks about “improvement of circulatory dysregulation.” Anyone who classifies broom as a cardiac anti-arrhythmic drug is certain to encounter problems and criticism if no differences are specified. In light of the current narrow concept of indications, this could otherwise lead to misunderstandings. None the less, broom is correctly included in this section on cardiac arrhythmias. Although arrhythmias that are functional in origin are harmless in the strict cardiological sense, they may still cause severe subjective discomfort. The use of anti-arrhythmic drugs is justified in such cases, provided the drugs are well tolerated during long-term and continuous therapy. Hence, the indications for broom are primarily functional cardiac arrhythmias mostly of the tachycardiac type, in combination with a tendency toward low blood pressure.

**Preparations**

**Scoparii herba**

- **Broom tea**
  Broom tea can be recommended for the latter indication. The tea is prepared by adding one cup of boiling water to one teaspoonful of the herb; this is allowed to steep for 10 minutes, then strained. A dosage of one cup of freshly prepared tea, three to four times a day is generally recommended.

- **Broom infusion**
  Broom infusion (2.5/180) is easier to use. The recommended dosage is one tablespoonful, three to four times a day.

**Gelsemium sempervirens, Yellow Jasmine**

Yellow jasmine is a climbing plant native to Mexico and Guatemala. The drug is derived from the rootstock (Gelsimii rhizoma), which is used to make the well-known light brown, bitter-tasting 10% tincture. The active constituents include the alkaloids gelsemine and sempervirine, which are members of the group of indol alkaloids. Gelsemium also reduces the overstimulation of the sympathetic and parasympathetic nervous system and calms the overtonicized vascular system. The therapeutic action of yellow jasmine can be
classified as **cardiosedative**. Unlike broom, it does not have a specific effect on the nerve impulse conduction system. Nevertheless, Gelsemium has a calming effect on the heart in patients with **extrasystoles** and **functional heart disorders**. The tincture is the most practical dosage form.

**Rx**
- **Tinct. Gelsemii 30.0**
  - D. S.: Take 20–30 drops, 2–4 times a day.

**Rx**
- **Tinct. Gelsemii 10.0**
  - **Extr. Adonidis fluid. 10.0**
  - **Tinct. Valerianae ad 30.0**
  - D. S.: Take 20–40 drops, 3 times a day.

**Rx**
- **Tinct. Gelsemii 12.0**
  - **Extr. Crataegi fluid. ad 30.0**
  - D. S.: Take 20 drops, 3 times a day.

**Rx**
- **Tinct. Gelsemii 10.0**
  - **Tinct. Valerianae aeth. ad 30.0**
  - D. S.: Take 20–30 drops, 3 times a day.
Colds and Influenza

Diseases such as the common cold, influenza, and laryngitis are usually virally induced. To use antibiotics or chemotherapeutic agents in these cases would not make any sense. The common practice of treating these diseases with antipyretic substances is also wrong and could lead to unnecessary complications. Virologists have long known that severe elevation of body temperature (fever) prevents most viral pathogens from reproducing in the human body. High fever is therefore a causal treatment for viral infection. In modern medicine, we generally tend to treat only the symptoms of colds and flu and leave it up to the body’s immune system to overcome the disease itself. The natural (unspecific) defense system plays a major role in this process. In this sense, fortification (stimulation) of the body’s immune system in patients who are susceptible to infections can have preventive as well as curative effects (in the early stages of disease). Adults who contract more that six infections per year (and children who contract more than 12 infections per year) are classified as susceptible to infections. Echinacea is an excellent immunostimulant in these cases.

In folk medicine, it has long been known that colds and flu can be effectively treated by inducing sweating. The corresponding medicinal herbs, called diaphoretics, are very effective for this purpose. The best known herbal diaphoretics are elder flower and linden flower.

Herbal Remedies

The only “true” herbal diaphoretic is jaborandi folium or pilocarpine, the alkaloid derived from the leaves of Pilocarpus jaborandi. Pilocarpine directly and potently stimulates the activity of the sweat glands. The drug alone can produce significant quantities of sweat without the additional application of heat. When used together with heat, it induces a powerful sweating effect. The diaphoretic effect of pilocarpine is, however, much too strong for indications such as colds and flu. Furthermore, the risk of toxic side effects is unacceptable in such cases.

For treatment of colds and flu, the dried leaves of the Pilocarpus jaborandi should be used instead of pure pilocarpine. We recommend the administration of Jaborandi tea, which is made by pouring one cup of hot water onto one teaspoonful of the drug and straining after 5–10 minutes. The patient should drink one to two cups of the tea. The diaphoretic effect can be enhanced by a hot bath, although this more drastic cure can only be recommended in patients who are otherwise healthy and physically fit.

Two other medicinal plants, namely elder and linden, also have diaphoretic action. Elder and linden flower preparations are better tolerated than Pilocarpus. Furthermore, their effects are easier to control.
Sambucus nigra, Elder

The elder is a shrub that often grows along rivers in Germany and is commonly planted in gardens. The small, white flowers bunch together to form umbrella-like inflorescences. The purplish-black berries are edible. Both the flowers (**Sambuciflos**) and the berries (**Sambuci fructus**) are used in medicine, but only the flowers have a diaphoretic effect and are used for unspecific immunostimulation. The berries are not suited for this purpose. They have a mild laxative effect and, when administered in large doses, produce nausea and vomiting. Hence, the Commission E monograph applies only to elder flowers. The most important constituents in elder flowers are flavonoids, hydroxyphenylcarbonic acids and esters, steroids, and triterpenes.

Preparations

**Sambuci flos**

The tea is made by pouring a cup of boiling water onto two teaspoonfuls of the drug and straining after 15 minutes. To fortify the immune system, the patient should take one cup of the tea, several times a day. In sweating cures, the patient should take approximately 1/2 liter of the tea together with a hot bath. Once heavy perspiration sets in, the patient should get out of the bathtub and wrap up in one or more blankets to continue perspiring for at least another 30 minutes, then dry off with a towel. This can, of course, be followed by an additional resting period. In this case, it is better to take the sweating cure in the evening.

**Elder juice** is an old folk remedy. This refreshing and revitalizing juice is a very popular beverage. It is often taken in “spring cures,” which do indeed improve the body’s resistance to disease. There are many recipes for elder juice. Here is a very simple one: Place 7 large umbels of elder flowers in 7 liters of water. Add three thick slices of lemon without the seeds. Allow to macerate for 24 hours, then strain through cheesecloth. Now add 1 kg of sugar and more lemon juice to taste. Stir thoroughly and allow to macerate for another 24 hours. The fresh elder juice is now ready to drink. For even better effects, the juice can be filled into bottles and stored in a cellar to allow carbonic acid to develop. This type of elder juice takes about three to four weeks for adequate carbonation. It is best chilled before use.

**Tilia cordata** and **Tilia platyphyllos**, Winter and Summer Lindens

The winter and summer lindens are two of the best known trees in Germany. The summer linden now almost never occurs naturally. The tree is distinguished by its large leaves, the undersides of which are covered with short hairs. It starts to bud earlier than the winter linden and blossoms 8–14 days before it. The winter linden has bare leaves, the undersides of which are sea-green; it is rather common in deciduous forests, but usually occurs in very small numbers. Hardly any linden groves exist.
The flowers (Tiliae flos) are used in medicine. They contain flavonoids, tannins, and mucilage. Fresh linden flower tea has a wonderfully aromatic smell and taste and is therefore popular with children. The tea can be sweetened to taste with honey if desired. Like elder flower tea, linden flower tea is also a good diaphoretic. The potency of the two drugs is approximately equal. The effect of linden flower goes beyond that of a diaphoretic; the drug also results in general immunostimulation, even if perspiration does not actually occur.

Preparations

**Tiliae flos**

A simple elder or linden flower tea is a practical and sufficient remedy for colds and flu in children and adults. The tea is prepared by pouring one cup of boiling water onto one teaspoonful of the drug, then straining after 10 minutes. The tea should be sipped slowly while it is still hot, if possible. The recommended dose is one cup, several times a day. Simple, yet effective diaphoretic tea mixtures are also easy to make. Here are some examples:

<table>
<thead>
<tr>
<th>Rx</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Flor. Sambuci</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flor. Tiliae</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flor. Chamomillae a€“ ad 100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| M. f. spec. | Pour 1/4 liter of boiling water on 2–3 teaspoonfuls of the tea mixture and strain after 10 minutes. Drink at once while still hot.

The following combination with Jaborandi flowers has an even stronger diaphoretic effect:

<table>
<thead>
<tr>
<th>Rx</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fol. Jaborandi 10.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flor. Tiliae</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flor. Sambuci a€“ 20.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| M. f. spec. | Pour 1 cup of boiling water onto 1 teaspoonful of the tea mixture.

**Artemisia absinthium, Wormwood**

Wormwood (Artemisia absinthium) also leads to general improvement of physical health in colds and flu. A large dose is needed, the best solution being in the form of a wormwood tea made using one to two teaspoonfuls of the herb per cup of boiling water; this should be drunk hot. It is possible to use the fresh herb straight from the garden. Or, as another alternative, the patient can simply take 20–30 drops of wormwood tincture diluted with hot water. Wormwood is a potent tonic bitter with a central stimulating effect.
Echinacea purpurea, Echinacea pallida, Echinacea angustifolia, Echinacea

Echinacea, or purple coneflower, is one of the most interesting medicinal plants of our day. It is the most important representative of the herbal immunomodulators. In light of the great complexity and individuality of the human immune system, it is not surprising that there is a vast body of very interesting experimental data showing that Echinacea preparations stimulate the immune system, although it is not possible to determine the exact mechanism of this action. The body of practical and clinical experience is the foremost source of information, which has now been substantiated by a large number of clinical studies. Immunology is still a very future-oriented field of research in which more questions than answers exist. This also applies in the case of echinacea.

Echinacea is indigenous to North America. Certain Indian tribes in Nebraska and Missouri have been using the plant as a medicinal herb for a long time. It was brought to Europe toward the end of the 19th century, and has been cultivated here ever since. It can now be found as a typical garden plant. Echinacea is a composite (Asteraceae). Its generic name is derived from the Greek word “echinos” (= hedgehog). Echinacea is a herbaceous plant that grows to heights of 60−100 cm. A primordial stalk, leaves, and flowers develop soon after the plant germinates from the underground shoot anlage. The broad, oval leaves have variably serrated edges. Both sides of the leaves bear bristly hairs, the upper side is bright green. Echinacea angustifolia has narrower, linear lanceolate leaves that taper off toward the base; they are trinervate and undivided. The color of the petals can range from purple to white. The purple color is darkest in Echinacea purpurea, which is why it bears that name.

The expressed juice of the aerial parts of the blooming purple coneflower has been most extensively researched. Commercial echinacea juice has been available on the German market for many years. It is still not definitively clear whether the efficacy of different echinacea plants and of the various preparations made from them varies. In his most recent study, Wagner (1991) did not observe any significant differences. Hence, we can now assume that all three Echinacea species have comparable effects.

The fresh aerial parts harvested at the time of flowering (Echinacea herba) as well as the root (Echinacea radix) are used as the drug. Of the currently known constituents of Echinacea, the principle components are polyene and polyvinyl compounds, volatile oil, resins, and heteropolysaccharides.

Pharmacology

An extensive review of the pharmacological data on echinacea was performed by Bauer and Wagner (1989), who made a distinction between immunological and nonimmunological actions. According to the authors, echinacea has anti-infective and antiphlogistic local tissue effects. The anti-infective effect is attributed to the direct or indirect blockade of bacterial and tissue hyaluronic acid/hyaluronidase systems. This may explain the well-known ability of echinacea to heal chronic suppurative wounds and secondary skin infections. The polysaccharides and alkylamides may be responsible for the antiphlogistic effect.

According to Bauer and Wagner, the immunogenic effects of echinacea include an increase in properdin levels in guinea pigs, an increase in the leukocyte count in humans, an increase in both the granulocyte count and phagocytosis capacity in mice and humans exposed to radiation, and an increase in phagocytosis (carbon clearance method). The proliferation of lymphocytes, on the other hand, was not or was only slightly affected. All of the above-mentioned findings can be summed up as enhancement of the natural (unspecific) immune defenses.

Indications

The most important indications are viral (grippal) infections, colds, and chronic suppuration. The internal uses for echinacea as specified by the Commission E are “adjunc-
tive treatment of chronic recurrent respiratory tract infections and chronic recurrent urinary tract infections”; the external uses are “treatment of superficial wounds that tend to heal poorly.” The available data on the use of echinacea in practice, volunteers, and controlled studies substantiate the above-mentioned indications. Melchart et al. (1994) analyzed and evaluated the effects of combination preparations containing echinacea in a total of 26 controlled studies. Personal experience also demonstrates that echinacea is a very useful prophylactic drug in patients with an increased susceptibility to infections. The administration of 50 drops of echinacea tincture in the morning has proved to be very useful. None the less, no systematic or controlled studies have been performed to assess the efficacy of the drug in this indication or at this dosage. Intermission treatment is essential, because the immunogenic effect of echinacea decreases during long-term or maintenance therapy. There are, however, only few data from controlled studies. Hence, these statements are based solely on practical experience.

Preparations

**Echinacea herba et radix**

Echinacea tea is not to be recommended. For those who do not wish to use any of the many well-tried phytopharmaceuticals available on the market, Echinacea tincture (1:10) is to be preferred. Adults should take 10 drops of the tincture added to some water several times a day; children should receive 3×5 drops of the tincture added to some water.

In addition, there are an immense number of commercial, single-agent phytopharmaceuticals containing Echinacea.

**Beta vulgaris var. conditiva (cruenta), Red Beet, Beetroot**

The general stimulant and resistance-enhancing effect of the red beet is attributable to the presence of betanin, an anthocyan from the group of flavonoids. Large volumes of the fresh plant juice are required for therapeutic purposes. The juice stains the urine and bowels red; this should not be mistaken for blood.

Red beet has not achieved practical significance and cannot compete with echinacea. In folk medicine, it is recommended time and again as a medicinal plant, for example, to increase the body’s defenses against cancer. None of these claims has been verified scientifically.

**Vitamins in Medicinal Plants**

Vitamins, especially vitamin C, increase the body’s general resistance to disease. The rule is therefore to administer plenty of vitamin C in any acute infectious disease, because fever is associated with increased vitamin C consumption. The body should be saturated with vitamin C, so to speak. The excess will be excreted, and no toxic effects are to be expected.

The best way to get plenty of vitamin C is to eat fruits and drink juices with a high vitamin C content. Lemon juice is the best known source of vitamin C; it also contains P vitamins, such as citrin and hesperidine. This explains why lemon juice was more effective in treating scurvy than pure vitamin C preparations. We now know that a number of fruits, including some of those indigenous to Germany, have a comparable vitamin C content. Hence, the lemon is not always the sole or best natural source of vitamin C. Many of Germany’s native and cultivated plants are rich in vitamin C, especially the dog rose, the sallow thorn (sea buckthorn), and the black currant.

**Rosa canina, Dog Rose and Other Rose Species**

The red skins of the dogrose contain large quantities of vitamin C. It is therefore used to make purees, jams, and juices. The bright red fruits are called hips. In medical nomenclature, they are called *Cynosbati fructus* (kyon...
Dog Rose (Rose Hips), Rosa canina

= dog; batos = thornbush). The red part of the rose hip is the fleshy receptacle of the fruit. The fruit contains small seeds (Cynobati semen) that are used as a household tea with mild diuretic effects.

Rose hip tea for treatment of colds and flu is prepared by pouring a cup of hot water onto 2–5 g of the drug, then straining after 15–30 minutes. The patient should take a cup of the tea several times a day.

Rose hip tea also has mild diuretic action. To flush the urinary tract, large volumes of the tea should be taken several times throughout the day. Cold rose hip tea is a good thirst quencher for patients with fever.

Hippophae rhamnoides, Sallow Thorn, Sea Buckthorn

This branching bush occurs most abundantly along the rivers of the pre-alpine region. It was also planted by the sea to fortify the dunes. The sallow thorn has narrow, silvery leaves and bright red fruit. Like the rose hip, the fruit is rich in vitamin C, and purees and juices are prepared from it. Because of its pleasant taste, sallow thorn fruit was quickly accepted and has now gained a permanent position as a rich source of vitamin C. The tea can hardly be recommended.

Ribes nigrum, Black Currant

Wild black currant can be found in wet forests and alder swamps in Germany, but the plant is more commonly cultivated in gardens. The fruit is black, hence the name. A large number of yellow, glandular dots can be seen on the underside of the leaves. This makes the black currant easy to recognize and distinguish from the other currants. We have already learned that it is a useful antidiarrheic. It contains substantial quantities of vitamin C, around 2000 mg per kg, as well as potassium, rutin, and a black pigment. Since the red currant has a much lower vitamin C
Hot black currant juice is very useful in warding off beginning colds and flu. To preserve the vitamins, the juice should not be directly heated, but merely diluted with hot water. We also recommend that a glass of the juice be taken at noon and in the evenings during the reconvalescent period.
<table>
<thead>
<tr>
<th>Latin name</th>
<th>English Name</th>
<th>Drug Name</th>
<th>Indication(s)</th>
<th>Commission E Monograph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammi visnaga</td>
<td>Khella</td>
<td>Khella fruit</td>
<td>Mild stenocardiac complaints, adjuvant treatment of mild obstruction-related respiratory tract complaints, adjuvant postoperative treatment of urolithiasis</td>
<td>Negative</td>
</tr>
<tr>
<td>Ananas comosus</td>
<td>Pineapple</td>
<td>Raw bromelain</td>
<td>Indigestion related to pancreatic disease, traumatic edema</td>
<td>Positive</td>
</tr>
<tr>
<td>Angelica archangelica</td>
<td>Angelica</td>
<td>Angelica root</td>
<td>Lack of appetite, dyspeptic complaints, mild gastrointestinal spasms, bloating, flatulence</td>
<td>Positive</td>
</tr>
<tr>
<td>Arctium lappa</td>
<td>Greater Burdock</td>
<td>Rootstock</td>
<td>Diuretic, diaphoretic</td>
<td>Negative</td>
</tr>
<tr>
<td>Arctostaphylos uvae ursi</td>
<td>Uva Ursi, Bearberry</td>
<td>Uva Ursi leaves</td>
<td>Inflammatory diseases of the efferent urinary passages</td>
<td>Positive</td>
</tr>
<tr>
<td>Armoracia rusticana</td>
<td>Horseradish</td>
<td>Horseradish root</td>
<td>Catarrh of the respiratory tract, adjuvant treatment of infection of the efferent urinary passages</td>
<td>Positive</td>
</tr>
<tr>
<td>Arnica montana</td>
<td>Arnica</td>
<td>Arnica flowers</td>
<td>Externally, for treatment of injuries, bruises, sprains, contusions, fracture edemas, rheumatic muscle and joint complaints, inflammation of the mouth and throat, furunculosis, superficial phlebitis</td>
<td>Positive</td>
</tr>
<tr>
<td>Artemisia absinthium</td>
<td>Wormwood</td>
<td>Wormwood herb</td>
<td>Lack of appetite, dyspeptic complaints, biliary tract dyskinesia</td>
<td>Positive</td>
</tr>
</tbody>
</table>