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# **Hamamelis virginiana**

**THE HEALTH SHRUB OF THE  
NORTH AMERICAN INDIANS**

## Wolfgang Möhring

Native North Americans have appreciated *Hamamelis virginiana*, the Virginian magic nut for centuries as an extremely precious medicinal plant. To this day, they consider it as an indispensable remedy for all kinds of affections of the skin and of the mucous membranes, including intractable lesions. The first white settlers in the 17th century gratefully took over the knowledge about the exceptional healing powers of the *Hamamelis* shrub from the natives. Not much later, the first plant extract was manufactured in North America. It was used as a universal remedy against skin inflammations, burns and cuts, a bit like chamomile or arnica preparations used in Europe.

From the mid 19th century *Hamamelis* became an official part of European and North American medicine. Besides its medical applications, extracts and distillates of *Hamamelis* are now widely used in cosmetics, in all parts of the world.



Hamamelis, the magician among medicinal plants

The ingredients of Hamamelis are among the most precious vegetal substances presently used in medicine. Their application stimulates the self-healing powers of our organism and contributes to normalize the metabolic processes in the cells of the body. Hamamelis can alleviate various widespread conditions and diseases of the skin and mucous membranes, but is also useful in the treatment of other common diseases such as varicose veins or hemorrhoids. The therapeutic spectrum includes the application in case of acute as well as chronic diseases. The ingredients exert healing and relieving effects in case of eczema, acne, mild burns, diarrhea, angina, smaller bleeding skin injuries, bleeding gums, contusions and hematomas.

## **Hamamelis, efficient help for the skin**

In the last few decades, the incidence of skin diseases has increased markedly. The reason is probably mainly the extent to which our organism is stressed by its exposure to toxic substances from the environment. Especially skin eczemas of various origins and allergic reactions of the skin and mucous membranes are more and more frequent. Hamamelis can often be applied with success precisely in these cases. Good results are also obtained with Hamamelis preparations in afflictions that are usually refractory to treatment, such as neurodermatitis and psoriasis. For these cases, Hamamelis often represents a viable alternative to lower-dosed cortisone preparations and to other side-effect eliciting medications. Contrary to cortisone, Hamamelis does not cause any side-effects. In many cases, the effect is not limited to the mere alleviation of complaints, but true healing of the skin condition is observed.

## **Hamamelis in skin care and cosmetics**

In the cosmetic realm, Hamamelis has been used for centuries because of its beneficial effects in skin and hair care. To remain healthy, and to display a youthful skin, is a major preoccupation of many people, and the market answers their expectations by offering numerous pharmaceutical and

cosmetic products. Many of these do not fulfill their promises as advertised. And most of them are based at least in part on synthetic chemicals, some even containing skin-damaging substances, that irritate or dry out the skin. Preparations based on the Virginian witch hazel, on the other hand, are nature based and extremely well suited for the general care of our skin. Their more than 100 different ingredients are present in a unique combination which strengthens the skin and prevents premature aging because of its antioxidant properties.

## **Healthy and beautiful skin with Hamamelis**



In the realm of cosmetics, Hamamelis is applied in the form of astringent, vitalizing, facial lotions, lotions or creams for the treatment of rough or chapped skin, or as hair tonics. The astringent Hamamelis tannins contained in these products have the capacity to increase the tonus of fine skin vessels and to strengthen the skin surface. This contributes to prevent and offset wrinkle formation. Furthermore, the tannins and flavonoids contained in Hamamelis combat skin irritations and inflammations and protect the skin against disease-causing germs. The antioxidant polyphenols of Hamamelis

bind cell-damaging free oxygen radicals and protect our skin against an excess of oxidative substances that accelerate the aging process of the skin. *Hamamelis virginiana* is also appropriate for the daily care of baby and infant skin, since it is very well tolerated.

## **Hamamelis in hair care**

Special *Hamamelis* preparations for the care of the scalp, such as tonics and shampoos, exert a favorable effect in case of damaged hair, hair loss, itching of the scalp, or dandruff. The highly concentrated vegetal *Hamamelis* extracts vitalize and nourish the scalp. They stimulate the blood circulation in the scalp and thus contribute directly to the nutrition of the hair cells. The functions of hair-root cells are activated, hair loss does not progress further and in many cases is even reverted. *Hamamelis* preparations exert a documented beneficial effect in case of a dried-out scalp and dandruff.

## **A brief guide to the plant**



Only the leaves (*Hamamelidis folium*) and the bark (*Hamamelidis cortex*) of the native North American Virginian witch hazel are used for medicinal purposes.

**Introduction to Europe:** the Virginian witch hazel was introduced into Europe from 1736 onwards as a decorative shrub, after the English botanist Collinson had been rendered attentive to it by native North Americans. Since the beginning of the 18th century, the winter-resistant shrub is planted in gardens and parks. Today it can be found in nearly every botanical garden.

**Plant family and species:** the Virginian witch hazel, *Hamamelis virginiana* L., is a member of the family Hamamelidaceae, i.e. the Hamamelis shrubs or witch hazel shrubs, of which about 23 genera with 143 species are known.

They are found mainly in central and southern China, where most are indigenous. The generic name *Hamamelis* is derived from the Greek words “hamatos” and “melon”, meaning “hooked apple” and referring to the shape of the small, ligneous, fruits. The species name *virginiana* refers to the home of this particular *Hamamelis* species, to federal state of Virginia. Some botanists, however, believe the name to be derived directly from the word *virgin*, referring to the rather astonishing fact that the shrub already carries fruits when it starts blooming or even before. This is a botanical peculiarity.

**Description of the plant:** *Hamamelis virginiana* is a loosely branched, summer-green, perennial and hardy shrub. From short roots, the pliable, two to three meter long rods shoot upwards, somehow like those of a hazelnut tree. In favorable terrain, however, and with increasing age, *Hamamelis* may develop to a real tree and reach a height of up to 10 meters. In Central Europe, heights of ca. five meters are the norm. The small flowers, golden-yellow and very pretty, appear in the fall, sometimes even in winter, when the leaves have long fallen off, and then they offer a delightful sight.

**Occurrence:** the Virginian hazel nut is found in the wild in mixed deciduous forests of Eastern North America (USA and Canada), from Nova Scotia to Florida und westwards to the Mississippi River. The most important regions

are the deeply forested zones and hilly woodlands of the North American East Coast.

### **Hamamelis' role as a medicine for the North American Indian**

**A tradition of holistic medicine:** the natural medicine transmitted orally by the native North American healers is characterized by rituals and songs, body and soul cleansing procedures, meditation and deep knowledge of the healing properties of all the various plants. Since Indians used to live in direct contact with Nature, they were experts in gathering and using plants.

But Indian healers were and are also said to possess a special sensitivity allowing them to feel “waves” emitted by humans, animals, plants and minerals. “You can place a plant into my hand, even one I have never seen before, and I can understand it’s essence, it’s outer and inner build.” (Rolling Thunder, Cherokee medicine man).

**Hamamelis as an Indian medicine:** when white men met Indians for the first time, the tribes of northeastern America were using about 275 plants for medicinal purposes. Among these, *Hamamelis virginiana* was one of the most important. Poultices and cataplasms from fresh *Hamamelis* plants were used for external applications, decoctions for internal use.

The Indians applied the witch hazel preparations externally in case of skin irritations of any sort, in case of bleeding, contusions, cutting wounds, insect stings, injuries due to burning and other skin injuries, hemorrhoids, painful tumefactions, furuncles and tumors. Steam from *Hamamelis* extracts was used for eye conditions. A tea obtained from bark and leaves was used because of the astringent effect in case of gut infections, gastric bleeding and excessive menstrual bleeding. The bitter bark decoction was used to stimulate the metabolism, appetite and digestion, a decoction of tops and twigs was used to “cleanse the blood”.

Twig decoctions and compresses with Hamamelis bark were supposed to activate the kidneys, a leaf decoction apparently alleviated asthmatic complaints.

Some of these applications of Hamamelis in traditional Indian medicine were taken over by European medicine, in particular the anti-inflammatory, anti-hemorrhagic, anti-diarrheal and anti-hemorrhoidal parts.

### **Present day medicinal use**



The following general overview of the domain of application of Hamamelis virginiana is based on the official indications recognized by the German, Swiss and US health authorities and on those empirical results of native Indian and European traditional medicine that have now been confirmed by scientific investigations.



### **Hamamelis is thus efficacious in**

- Inflammations of the skin and mucous membranes such as eczematous diseases of all kinds and origins, mild to moderate burns and sun burns, inflammations in the mouth, throat and gums, acute and unspecific diarrhea;
- Mild to moderate injuries, including bleeding wounds and injuries of the skin and mucous membranes, contusions, sprains and hematomas, nose and gum bleeding, follow-up treatment of surgical wounds;
- Complaints related to hemorrhoids and varicose veins;
- Itching, fissured and chapped skin, squamous skin, erythematic skin, irritated skin, labial fissures and anal fissures;
- Skin care, including in children.

### **The pharmacological ingredients of Hamamelis virginiana**

Dried Hamamelis leaves (*Hamamelidis folium*) contain:

- 10% or even more tannins and tannin constituents (especially catechin tannins), gallotannins in lower concentrations, such as hamamelitannin (2,5-di-O-gallolyl-D-hamamelose), as well as the pro-anthocyanidins of cyanidin and delphinidin.
- Various flavonoids, especially quercetin, kaempferol, myricetin, atragalin, isoquercetin.
- Organic acids such as chinic acid, caffeic acid, free gallic acid, ellagic acid and fatty acids.
- 0.01-0.5% volatile oils, 40% aliphatic alcohols, 15% aliphatic esters, 25% carbonyl derivatives and some safrole.
- Furthermore a mixture of solid paraffins.

The dried bark of Hamamelis (*Hamamelidis cortex*) is very rich in tannins, containing:

- 9-12% tannins, especially hamamelitannin (2,5-Di-O-gallolyl-D-hamamelose); also ellagitannin, catechin and some pro-anthocyanidins.
- The same flavonoids as in the leaves, although in lower concentrations.
- 0,1% essential oils, of mostly unknown composition as well as other volatile substances, gallic acid, fats and waxes, fatty oils and resin-like components.

**The efficacy of Hamamelis is documented by scientific research:**

In the last few decades, the results of scientific investigations have confirmed the empirical medicinal knowledge of the native North Americans. These studies have shown the tannins (including the catechins) and the flavonoids (quercetin, kaempferol, etc.) to be the main active principles of the plant. These substances, some of which have a bitter taste, elicit antibacterial and anti-inflammatory properties and can seal wounds, protecting the skin from penetration by harmful substances. For the Hamamelis plant itself, these tannins also act as a protection against injuries.

- As early as 1948, animal experiments have revealed a shortening of bleeding times and an acceleration of coagulation after the application of Hamamelis.
- In 1972, various Hamamelis preparations (extract and distillate) were shown in animal studies to be superior to the often used and proven horse chestnut extracts in the treatment of venous disease.
- In 1987, the measurement of skin temperatures revealed the vasoconstrictive effect of Hamamelis virginiana, in a controlled study, evidence for the haemostatic and wound-healing effects of Hamamelis.
- In 1991 a Hamamelis cream was shown to be equivalent to a classical non-cortisone containing cream (Bufexamac) for the treatment of neurodermatitis. Both products resulted in improved symptoms after three weeks of treatment. Further studies have shown that the anti-inflammatory effect of Hamamelis is equivalent to that of lower-dosed cortisone preparations. Hamamelis has also been shown to be

equivalent to such lower-dosed cortisone preparations in the follow-up treatment of surgical wounds.

- A study in 1991, comparing the results of the treatment of first grade hemorrhoid affections, showed the equivalence of the results obtained with a Hamamelis-containing cream with those obtained with two commonly used creams, of which one contained cortisone, for the symptoms soreness, itching, and bleeding.
- In 2001, the skin clinic of Karlsruhe (Germany) recommended Hamamelis as a basic treatment after a study investigating the efficacy of Hamamelis distillate, for instance in the case of a toxic eczema, since it can be applied without risk and permits to avoid the application of corticosteroids.
- In 2002, a study in the same clinic has demonstrated the antimicrobial effect of Hamamelis distillate in combination with urea, and in particular an inhibition against *Staphylococcus aureus* and *Candida albicans*. The Hamamelis preparation used was shown to possess anti-inflammatory, moisturizing and skin-barrier stabilizing effects.
- In an observational study with patients presenting neurodermatitis and other eczematous skin afflictions, that had previously been treated with well-known medications including cortisone preparations, Hamamelis distillate was seen to be better suited for long-term application than Bufexamac. Later recurrence of skin eczema could often be prevented.
- Animal experimentation has revealed an inhibitory action of Hamamelis on skin aging. The antioxidant properties of the tannins and flavonoids is thought to explain this effect.
- Various other studies have confirmed the anti-inflammatory, vasoconstrictive, secretion-reducing and anticoagulant properties of the different Hamamelis preparations. Furthermore, evidence for antimicrobial, antiviral and antioxidant or radical-capturing effects could also be shown. Thus, the addition of Hamamelis to synthetic sun

screens improved the quality of the sun protection. In this context the aqueous Hamamelis extract fared better than other vegetal extracts such as chamomile or cinnamon (University of Kyoto 1994).

### **Detailed effects of Hamamelis**

**Astringent effect:** the proportion of tannins (including catechins) exerting an astringent (“drawing together”) effect, is particularly important in Hamamelis. It is among the most astringent-acting medicinal plants. The tannins it contains “seal” the cell membrane of the skin and mucous membranes and reduce the permeability of the fine and ultra-fine capillaries in these tissues. At higher concentrations, the tannins bind to proteins of the tissue, resulting in the formation of a thin membrane in the wound area, which hinders the penetration of disease-causing germs such as bacteria and fungi, and decreases the absorption of toxic substances. Injuries thus heal more rapidly and the formation of new tissue is accelerated.

**Antimicrobial effect:** Hamamelis reinforces the overall resistance of the skin against pathogens. The substances responsible for this property are the tannins and flavonoids, which are members of the polyphenol family. These plant-protecting substances contained in Hamamelis decrease the susceptibility of skin cells to bacterial and fungal irritants and inhibit the proliferation of these microorganisms.

Experiments have also shown a healing effect of the tannins on skin cells invaded by the herpes simplex virus.

**Antioxidant effect:** tannins and flavonoids inhibit oxidative processes and offer a protection against cell-damaging free oxygen radicals. These free radicals occur as natural degradation products of the metabolism of the human organism. Their disease-causing effect is due to the fact that they accelerate the aging process of our cells. Every form of physical or mental stress, every disease, every contact with drugs or toxic contaminants, as well as extreme physical exertion or an unbalanced nutrition can cause an increase in the formation of aggressive radicals. The oxidative stress that this

creates is seen today as basically co-responsible for the development of age-related diseases, leading to an increase in allergies, arteriosclerosis, rheumatic disease and cancer.

Antioxidants such as those contained in Hamamelis, bind free radicals and therefore contribute to the prevention of premature signs of wear and to the maintenance of young and healthy skin.

**Anti-inflammatory effect:** it is the tannins that are mainly responsible for the anti-inflammatory effect of witch hazel. By sealing the cell membranes and reducing the permeability of small vessels, inflammatory processes are inhibited and itching is alleviated. Some of the flavonoids contained in Hamamelis also exert an anti-inflammatory effect.

Furthermore, laboratory studies have shown that Hamamelis distillate exerts a favorable influence on the white blood cells responsible for the immune response. The anti-inflammatory effect of a Hamamelis cream has been shown in several studies to be equal to that of a low-dosed cortisone preparation and superior to various basic creams and to a chamomile preparation.

**Antifungal effect:** Hamamelis stops the pathogenic proliferation of yeasts that are normally present on healthy skin. This explains its efficacy for instance in the case of seborrheic dermatitis, a disease which can be triggered, among other factors, by metabolites of these yeast cells.

**Venotonic effect:** the ingredients of witch hazel increase the tonus of the venous walls and thereby improve the venous return. At the same time, the permeability of the small venous vessels is reduced, thus alleviating complaints due to varicose veins. This effect was demonstrated scientifically as early as 1981.

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Wolfgang Möhring has published numerous books, in Germany and else-where, centering on the theme of plant therapy.

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