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File: ■ Boneset (*Eupatorium perfoliatum*)
■ Dyspepsia
■ Febrile Infections

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RE: Traditional Uses of Boneset for Flu and Other Fevers Still Maintained in Practice

Brinker F. Boneset in dyspepsia and febrile infections. *J Am Herbalists Guild*. 2010;9(1):13-23.

Boneset (*Eupatorium perfoliatum*) was a valuable medicine for Native Americans, one of the first indigenous medical herbs adopted by European settlers. The article details this use, as well as modern laboratory and clinical studies.

Boneset has had many common names reflecting its appearance and uses, e.g., “thoroughwort” for the growth habit of its leaves or “ague weed” for its use in malarial fevers. At least 26 northeastern American species are known. In the early 20th century, when its use was highest, two species from the same plant family (Asteraceae, then Compositae) were sometimes misrepresented as boneset: white snakeroot (*E. ageratooides*) has diuretic, diaphoretic, and antispasmodic effects, while sweet-scented life-everlasting (*Gnaphalium polycephalum*) was used for colds and influenza.

Native Americans used boneset leaves or plant infusions to treat fevers by increasing sweating, as a digestive tonic, and as a vermifuge. It was used as a laxative and an emetic, and was applied externally in poultices for headaches or rheumatism. The Ojibwa put chewed boneset on rattlesnake bites; the Meskwaki made a root poultice for the same purpose. Boneset preparations were used by various tribes to relieve pain, particularly in lungs or from flu or fever, but also for menstrual or urinary pain, while Ojibwa used boneset root to correct irregular menstruation. The Iroquois used the root decoction to treat alcoholism.

Early Euro-American medical literature has many references to boneset leaves and flowering tops taken as infusions and decoctions. For fevers, these became a staple. It gained its name for its efficacy in “break bone fever,” influenza with pain so severe that the patient’s bones felt as if they were breaking. Boneset was so popular for malaria that when quinine (*Cinchona officinalis*) arrived in malarious Missouri, many residents preferred boneset. It was also used for “obstinate” skin conditions. Home publications carried instructions on its preparation and use, including adding molasses to powdered leaves to offset the bitter taste.

Different effects are seen for cold and hot infusions. Cold water extract, in small quantities, is a tonic for dyspepsia and a mild laxative. Warm water extract, in larger amounts, promotes

sweating, while still exerting a laxative effect. In large quantities, the hot infusion induces vomiting. A decocted water extract of leaves and flowers, boiled into a paste, was rolled into pills for a “relaxing tonic” and as a base for other herbs. In *The Physio-Medical Dispensatory* of 1869, Dr. William Cook described a fluid extract made by macerating a pound of boneset in 50% alcohol, collecting a half pint of percolate, then percolating it with water, followed by evaporating the aqueous percolate to a half pint, combining the two, and filtering the combined percolates. This 1:1 extract was an improvement because much smaller doses were effective.

Eclectics also used boneset for intestinal problems that did not require purging or vomiting, such as chronic dyspepsia with anxiety. An association between nervous system dysfunction, intestinal circulation, and poor digestion was posited. Early homeopathic doctors described it as generally influencing the whole organism. The herb was included in all 19th century *US Pharmacopeias (USPs)*, and in the *Eclectic Dispensatory* of 1852. In 1890, fluid extract of boneset entered the *USP*.

In 1918, after the discovery of two distinct complexes in boneset, Lloyd Brothers introduced Colloidal Specific Medicine Eupatorium. One complex, soluble in water, alcohol, glycerin, or syrup, is a diaphoretic and tonic. The other, soluble in alcohol but not in water, glycerin, or syrup, is nauseating and cathartic. This second complex is precipitated out when extracts sit for 12 hours, and its exclusion made a palatable tonic that proved especially valuable in the influenza pandemic of 1918. Used as preventive or remedy, infusion or Specific Medicine, boneset relieved pain and coughing, decreased severity and duration of illness, and was safer and more effective than other medications available.

After the 1900 8th revision of the *USP*, boneset was transferred to the *National Formulary (NF)*. Naturopathic colleges in the 1920s continued to teach its uses and preparations. It remained in the *NF* through 1946, largely replaced by synthetic pharmaceuticals. Ironically, at about the same time it was set aside in medicine, boneset was shown to exert antimicrobial action, performing well against Gram-positive strains.

In the 1970s, interest was renewed when phytochemical analysis revealed boneset’s many interesting compounds. Flavonoids, sesquiterpene lactones, terpene derivatives, sterols, and caffeic acid derivatives have all been isolated from boneset and its fractions and distillates.

In 1981, a German clinical study compared boneset to aspirin for symptoms of the common cold, finding them equally effective. Subsequent laboratory tests found enhanced phagocytic activity caused by more than one boneset compound. This may indicate immune-enhancing effects. Adding echinacea (*Echinacea angustifolia*), wild indigo (*Baptisia tinctoria*), and arnica (*Arnica montana*) to boneset produced an increase in phagocytosis of 50% over echinacea extract alone. British and American herbalists and naturopaths use boneset, sometimes with other herbs, for most of the conditions treated by Native Americans over 300 years ago.

Other than its potential for excessive vomiting or diarrhea, boneset has few adverse effects. Some have an allergic dermatitis reaction to boneset compounds. While uncharacterized alkaloids have been reported, pyrrolizidine alkaloids found in some *Eupatorium* species have not been found in boneset. It should be avoided in pregnancy due to potential abortifacient effects as they occur in cattle when grazing on this plant.

—Mariann Garner-Wizard

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