

A Land Flowing with Milk and Antibacterial Honey

By **Michelle Hoch**

Exodus 3:8 relates, “I have descended to rescue them from the hands of the Egyptians and to bring them up from that land... to a land flowing with milk and honey...” For many, this is the first passage that comes to mind following the mention of honey in the Bible. On this verse, scholars comment that the mention of honey was to foreshadow the abundance and prosperity in the land of Israel. To this day, scholars study the medicinal function of honey, with its healing powers rooted in both scriptural and scientific works alike.

The Babylonian Talmud discusses the subject of medicine more extensively than any other ancient text. Within Tractate Gittin, a span of pages from 68b to 70a presents an entire collection of medical therapeutics. Although this section is not demarcated from what comes before and after, it has a distinct style and tone which differs from the usual Talmudic discourse. In technical terms, Gittin refers to the get, or Jewish legal divorce document. The subject of health is introduced into the regulations of divorce when the Mishna states that a get would be invalid if, at the time of its preparation, the husband became “seized” by a “kordiakos”. The accompanying Gemara asks what “kordiakos” is. Following this discussion, the Gemara begins on a stream of medical remedies. Many of the remedies are similar in structure, as all are recipes, but differ in the mode of preparation or application. Tractate Gittin (69a) relates:

For catarrh he should take about the size of a pistachio of gum-ammoniac and about the size of a nut of sweet galbanum and a spoonful of white honey and a Mahuzan natla of clear wine and boil them up together... [7].

Catarrh is excessive discharge or buildup of mucus in the nose or throat, associated with inflammation of the mucous membrane. Rashi here relates the possibility that catarrh is pleurisy, a condition in which the pleura, a membrane that lines the inner chest cavity and surrounds the lungs, becomes inflamed. This remedy for a respiratory infection is detailed in regard to quantities, but is deficient in

discussing mode of application. As a respiratory infection, it is presumed that this concoction was made to be either ingested or inhaled. James M. Steckelberg, M.D. of Mayo Clinic, explained a study in which children age two and older with upper respiratory tract infections were given up to two teaspoons of honey at bedtime. The honey seemed to reduce nighttime coughing and improve sleep. In fact, in the study, honey appeared to be as effective as a common cough suppressant ingredient, dextromethorphan, found in typical over-the-counter medications. [1]

A 2012 study from physicians at the Sackler School of Medicine in Tel Aviv tested the effects of honey on nocturnal cough and sleep quality. They enrolled 150 children ages 1-5 years with coughs and difficulty sleeping due to upper respiratory tract infections. The experiment was conducted to compare the effects of a single nocturnal dose of three honey products to a placebo date extract. A survey was administered to parents on two consecutive days. On the first day, no medication had been administered the previous night, and on the second day, honey or placebo had been administered thirty minutes before bedtime. Outcomes were measured by cough frequency, severity and child sleep quality. In all children who were given honey, a significant improvement was shown in the night following administration of honey to the unmedicated, prior night. Parents also rated the honey product higher than the date extract for symptomatic relief of the children’s nocturnal cough [4].

The land of Israel is characterized in the Bible as “a good land...a land of wheat and barley, of vines, figs and pomegranates, a land of oil producing olives and honey.” (Deuteronomy 8:8) The honey mentioned here refers to date honey. Dates are among the most important fruits mentioned in the Talmud. Dates were considered a substantive source of nutrition. Tractate Ketubot (10b) states, “Dates [have the properties of] warming up, of satisfying the appetite, or purging, of strengthening, without any evil effect on the stomach.” Moreover, it is stated that dates annihilate three things: evil thoughts, diseases of the

bowels, and hemorrhoids [5]. A study published by the Journal of College Physicians and Surgeons in Pakistan released an experiment proving this Talmud conjecture to be true. Their findings suggested that natural honey is equally as effective in healing of gastric ulcers as cimetidine, an antacid [2].

Tractate Bava Batra (3b) relates a story of Herod and his wife. "When she saw that he (Herod) wanted to marry her, she went up on the roof and cried out, 'I am throwing myself down from this roof.' He preserved her body in honey for several years..." [6]. To understand the scientific nature of this Talmudic proclamation, Dr. Shankargouda Patil studied the preservative powers of honey. Dr. Patil took a sample of fresh goat meat and submerged each piece into separate containers containing formalin, water, honey, and jaggery syrup, a coarse, unrefined brown sugar solution, respectively. After twenty-four hours, he then processed the tissues and stained them in traditional medical protocol. He noted that formalin, a commonplace preservative, is highly toxic. The tissues preserved in honey and in formalin showed almost identical results. Patil noted that honey's high osmolarity, low pH and presence of components like hydrogen peroxide and phenol all contribute to the antioxidative and antibacterial effects of honey. He theorized that in a low pH environment, the fructose present in jaggery and honey breaks down to aldehydes. These aldehydes cross-link with tissue amino acids, similar to the action of formaldehyde. This leads to tissue fixation. To bolster his findings, he published a second experiment regarding the usage of natural sweeteners as histopathological fixatives. This time, he studied the fixative properties of jaggery and honey over six months, using formalin as a control. After six months, his studies concluded that honey was just as good a fixative as formalin. In

addition, the honey-fixed tissues left no pungent odor in relation to the formalin.

Since ancient times, honey was used successfully for treatment of infected wounds. Recently, honey has been introduced into clinical practice and has been efficacious in healing wounds including those of surgical, traumatic and even neonatal postoperative nature. Application of honey causes rapid clearance of infection, debridement of the wound and suppression of inflammation while also minimizing scarring and stimulating new epithelial growth. A review of human and animal data, including over 195 participants, provides evidence for the effectiveness of honey in wound healing. The conclusions of the study suggest that wound healing activity is not only due to honey's antimicrobial properties, but also to its high acidity, high viscosity and anti-inflammatory properties [3].

Honey has been widely accepted as a food and medicine by all generations and traditions, both ancient and modern alike. For thousands of years, honey has been used to treat a variety of ailments through topical application and ingestion. Only in recent years has research bolstered the Talmudic conjectures with scientific findings. Honey is not only antimicrobial, but also exhibits preservative qualities. Our Sages weren't wrong: honey is a sweet, sweet remedy.

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