

BEE VENOM AS A CURE

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Man is likely to have been interested in bees ever since his existence, because bees existed already 40 million years before his evolvement. It is known that 40—50 million year old amber was found on the Baltic Sea coast, sometimes also containing bees which are absolutely similar to the present honey bee *Apis mellifica*.

No other being, so small and with such a short life, probably exists on the earth, to supply us with so many, varied, and useful products as our honey bee *Apis mellifica*. Men are likely to have been aware of the qualities of honey and beeswax since the first days of their existence. They probably also knew the effect of bee venom because they actually felt its real effect (pain) with every sting. That is why references to honey, beeswax, and bee venom are found in many early historic accounts. Interest for pollen, propolis, and royal jelly was reported only later.

At the Institute of Pharmacology of the Würzburg University, research work on animal venom has a longstanding tradition; FAUST, FLURY, NEUMANN, FORSTER, HABERMANN, JENTSCH, etc. have conducted fundamental research on the chemical composition and pharmacology of bee venom. When emerging, adult bees do not have bee venom. But already on their second day of life, when stings cannot yet be used, we have found an average of 0.04 mg. bee venom in the venom pouch. In the next days, the amount of bee venom would increase, but the pouch would be filled only on the 15th—20th day of life — precisely in the period when the worker bees take over their function as guard bees, bee venom being indispensable to them. In this period, the venom pouch contains about 0.3 mg of liquid venom, i.e. 0.1 mg of dried venom. This amount of venom is slightly variable, also depending on food. By feeding tests we showed that the bees fed on no pollen (proteins) produce no bee venom. The season is also important. We found that the first spring generations produce the largest amount of venom, amount which decreases with the approach of autumn, but remains almost the same in winter, for a long time. The amount of bee venom and its quality also depend on the bee race.

With the earliest peoples of our history — Babylonians, Egyptians, Persians, Greeks, and Romans, beekeeping was thriving and there is no surmise that bees and their products were already used also for medical purposes — certainly primitive: tea of bees, bee ashes mixed with oil, etc. The Celtic and Germanic peoples prepared ointments for eye sores from bee ashes and honey and recommended bee products for stomach disorders, tooth aches, hair shedding, secretions, sterility, disorders in the menstrual flow, etc. Bees and bee venom also played an important part in homeopathy. I cite only a few publications, by C. HERING (1835), C. W. WOLF (1858), and GOULLON and KAFKA (1880). The bee was the

best remedy in rheumatism for the homeopaths too. There was almost no disease for which bees were not used as a cure, especially internally — tinctures and infusions. A curiosity was the use of bees to ascertain the apparent death, because bees were believed to refuse to sting corpses, and when forced to sting, no reaction of the epidermis would occur.

Independently, beekeepers have, for many generations, believed that bee stings would prevent and cure rheumatism. On this basis, Dr. TERTSCH was the first physician who made a systematic and thorough study on 173 patients with rheumatic affections. The 39,000 stings were efficient, and he published the results in 1888. Ten years later, Dr. LANGER reported on his first experiments with bee venom, and injected bee venom dilutions for the first time in patients in his clinic, with very successful results.

The therapy with bee venom became more important when bee venom was available for use by physicians and patients in a simple form to handle, with no danger or pain, and efficient too.

Meanwhile, the composition of bee venom was known quite thoroughly. It contains a number of components having an important pharmacological activity, the major ones being histamine, peptides such as mellitin, apamine, and the recently identified peptide M, as well as the enzymes hyaluronidase and phospholipase A. Researchers have managed to separate them, providing for easy chemical investigations. Because bee venom has a local effect and also causes a general change in the causal condition of the body, it is fitted for use in the causal therapy.

External use of bee venom, as ointment or liniment, induces a visible local hyperaemia (congestion) also of deeper tissues, thus activating the metabolism of tissues. After absorption, the hypophysis is stimulated — through the blood flow — and produces more ACTH which in its turn stimulates the adrenal cortex to produce more cortisone.

In the last 50 years, the medical press in the FRG, Austria and Switzerland published more than 100 scientific reports on the therapy with bee venom, but much more such publications have been released in other countries. All report the success recorded especially in rheumatic affections — muscular, articular and neurorheumatism, as well as in disorders of peripheral blood circulation, of muscular strain after effort, and in the prophylaxis and therapy of affections of sportsmen.

Allergy to bee venom is also successfully cured with injected solutions of bee venom. The treatment starts with small doses which are gradually increased until a visible reaction appears. Then the dose is maintained the same until no reaction occurs any more. Then, increased doses are inoculated.

In the countries in which the German language is spoken, physicians would prefer to use bee venom in ointments and liniments, while in other countries both bee venom solution and combinations with sulphur, honey and galvanic current are used.

The fact that bee venom — produced by bees as a means of defence in their struggle for survival — is available to us for utilization for therapeutic purposes, makes them even dearer to us.