

Jewish society was agrarian for centuries, necessitating the need for animal care, coupled with the Torah's high regard for animal welfare and the complex specifications for kosher meat it is not surprising that there are numerous mentions of veterinary medicine in the Talmud. There are references to experts, veterinary procedures, and significant medical knowledge which vastly predates modern science. The breadth of information on this topic found in the Talmud is extensive and astounding.

One of the 613 Torah commandments is *Tzar Baalei Chayim*, the prohibition to cause unnecessary harm to animals. Some Torah laws which fall in the category of *Tzar Baalei Chayim* are feeding animals before one eats, not leaving an animal with a heavy burden for no reason, and the prohibition of preventing an animal from eating while working. This tremendous regard for the quality of animal life is echoed in the Talmud. For example, in *Masechet Shabbos* (54b), it is noted to place a collar on a donkey to prevent irritating a wound, placing bands above the hooves of an animal that takes short strides to prevent it from injuring itself, supporting a ram's tail with a wagonette to protect it from lacerations, and covering a cow's udder to prevent vermin and leeches from sucking its milk. It also mentions putting *chanunos* on a ewe; two possible interpretations are given for *chanunos*. One, a compress to keep a sheep warm, or, two, the wood of a *chanun* tree that induces sneezing so the sheep will expel parasites. However, the Talmud points out that no matter what *chanunos* are, the word it stems from is *chanun*, mercy. The message of this *Mishna* is the importance of treating every animal with compassion.

Interestingly, included in the commandment of *Tzar Baalei Chayim* is the need to slaughter with a perfectly smooth blade, which the *Sefer HaChinuch* (Chapter 451) says is to spare unnecessary pain to the animal. In fact, all the laws of *shechita* (kosher slaughtering) endeavor to cause the least amount of pain to the animal being slaughtered. For example, for an animal to be deemed kosher, it must be slaughtered according to ritual tradition and it must also undergo a full, postmortem external and internal examination, called a *bedika*, to ensure there are no abnormalities (*treifos*). These very detailed and extensive laws demand full knowledge of animal anatomy. In fact, Rabbi David Vital, in his work *Keter Torah* (1536) was able to construct a detailed and accurate diagram of bovine anatomy solely based on discussions in the Talmud [1]. Because of the Torah's deep regard for animal welfare and the demand for extensive knowledge of zoological anatomy and abnormalities, it is no surprise that many of the Talmudic sages were experts in veterinary science.

Rabbi Shimon ben Chalafta is one of the veterinary personalities mentioned most often in the Talmud. He was

one of the last *tanaim* who lived in the second century and was considered a naturalist, expert botanist, and animal specialist [2]. The Talmud recounts a story of a hen with a dislocated thigh. Rabbi Chalafta set the limb, fashioned a splint, and the hen's leg healed. Additionally, there was a belief that once a bird lost its down, it would be unable to regrow it and would consequently die. Rabbi Chalafta disproved this theory by giving supportive care to a hen who had lost all its feathers, resulting in the feathers' regrowth and the hen's survival (*Chullin* 57b).

One incredible example of the breadth of knowledge possessed by the *tanaim* is found in the Talmud *Bavli, Masechet Chullin* 46a. There it is stated that if an animal is found to have an abnormality, it is able to retain its kosher status if it can be determined that the abnormality is not life threatening. An animal with a damaged liver, for example, is considered kosher as long as at least an olive sized portion of the liver remains intact. *Rashi*, famous French commentator of the 11th century, explains that this amount is enough "*kidei lehalos refuah*," to produce healing. Dr. J. L. Kazenelson, a Russian physician, writer, and scholar of the latter half of the nineteenth century [7], points out in *Hatalmud Vechochmas Harefuah* that the specific wording of "producing healing," rather than, "enough to continue living," or "to heal," implies that the remaining liver will not only heal but will also be able to regenerate until the entire liver is completely restored. Modern science did not discover this unique and incredible ability of the liver until 1894, fifteen hundred years after written in the Talmud [3]!

Furthermore, the Talmud accurately records the identifying characteristics of rabies in *Masechet Yuma* 83b and impressively offers a cure for a person bitten by a rabid dog. The Talmud suggests that eating from the liver of the infected dog could cure an infected person. Even though dogs are not kosher animals some Rabbis of the Talmud permit this practice since it was considered a legitimate cure. Legend has it that Rabbi Dr. Yisrael Michael Rabinowitz, a 19th century European scholar [8], was translating this part of the Talmud into French and showed it to his good friend Louis Pasteur, French chemist and microbiologist. The story is told that seeing this most unorthodox cure in the Talmud influenced Pasteur to begin his experiments that eventually led to his discovery of preventative vaccines, which have saved millions of lives [4].

Other examples of veterinary medicine in the Talmud are found in *Masechet Bechoros* (38a-b) which records that during the times of the *Beis HaMikdash* (Temple), an expert would be called to examine all the animals before they were sacrificed to ensure there were no abnormalities. *Illa*, an animal expert from Yavneh, was used for this and would

charge for his services. In addition to inspecting animals to see if they were fit for sacrifice, he also charged for his expertise in animal care in general (*Bechoros* 39a). In *Bava Metz'iah* (38b) there is a discussion regarding the uses of objects thought to be worthless. For example, soured honey is quoted as a salve for soreness or chafing of a camel's back. In regards to *treifos*, specific abnormalities or injuries that render an animal non-kosher, Rav Ashi (fourth century) would assemble all the butchers and animal experts for consultations when he had a complicated case (*Sanhedrin* 7b). There is also a reference to caesarean sections performed on animals ("one who is born from the side") and the resulting status of that animal (*Mishna Para* 2:3), hysterectomies, which are specifically mentioned in regard to any cow leaving Egypt, (*Bechoros* 4:4), and obstetrics which was reserved as "shepherds' work" not the work of a veterinarian (*Chullin* 4:3).

A most notable example is an instance of intubation mentioned in the Talmud. R' Yose ben Nahorai performed surgery on a ewe whose trachea had a puncture the size of

an Italian *issar* (an ancient coin). He inserted the outer layer of a reed, "*keromis shel kaneh*," and the ewe survived (*Chullin* 57b). According to Eli Tratner in an article written in the *The Israel Journal of the History of Medicine and Science*, this is the "first primitive kind of intubation in medical history" [5].

The numerous mentions of veterinary medicine in the Talmud show the high regard Torah Judaism has for animal welfare. These examples encompass much medicine and even include scientific discoveries which predate modern science.

Acknowledgments

I would like to thank my parents for always encouraging and supporting me. Also, Dr. Babich for his constant encouragement and advice. He truly represents *Torah U'Madda*.

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