

Animals Mentioned In The Islam's Prophetic Traditions: A Review Of The Scientific Evidence

ISMAIL FAHMI ARRAUF NASUTION¹, ABDUL MUFID^{2*}, KISNO³, MUHAMMAR AMIN⁴, IMAM JAYANTO⁵, SOLIHAH TITIN SUMANTI⁶, SUKARDIN⁷, WAHID WACHYU ADI WINARTO⁸, M. FADLI⁹, MIKSUSANTI¹⁰, ARIEF MUAMMAR¹¹, AHMAD TOHIR¹², AMIE PRIMARNI¹³, ISKANDAR¹⁴, IMAM ALI BASHORI¹⁵

^{1,9,11,14} IAIN Langsa, Indonesia

^{2*,15} Sekolah Tinggi Agama Islam Khozinatul Ulum Blora, Indonesia

³ Institut Agama Islam Negeri Metro, Indonesia

⁴ Universitas Azzahra, Indonesia

⁵ Universitas Sam Ratulangi Manado, Indonesia

⁶ Universitas Islam Negeri Sumatera Utara Medan, Indonesia

⁷ Sekolah Tinggi Ilmu Kesehatan Mataram, Indonesia

⁸ State Islamic Institute of Pekalongan, Indonesia

¹⁰ FMIPA Universitas Sriwijaya, South Sumatra, Indonesia

¹² STKIP Al Islam Tunas Bangsa Bandar Lampung, Indonesia

¹³ Institut Agama Islam Nasional Laa Roiba Bogor, Indonesia

*Corresponding Author

Email : mufid.prof@gmail.com

Received: 22.10.20, Revised: 12.11.20, Accepted: 04.12.20

ABSTRACT

This research examines the existence of a paradigm integration between religion and science. It is based on Qur'an and hadith for religion and physics, biology, chemistry, health, and medicine for science. The slogan of the Qur'an, which is always relevant, applies to the hadith as a manifestation of its teachings with meaning from God's revelation. Therefore, it is necessary to revitalize and contextualize the values and main objectives of hadith. Medicine in Islam is widely discussed in the Prophet's hadiths. In pharmaceutical science, the Prophet talked about pharmacognosy related to the properties of plants, animals, and several minerals with medicinal properties. This is a literature study that focused on hadith, science, and technology. The results showed that several scientific findings are in line with the Prophet's hadiths, including the wings of flies that contain disease and antidote, as well as treatment with camel urine. The article exposes these two phenomena that have never been revealed before.

Keywords: Contextualization, Integration, Exploration of Hadith, Scientific Findings

INTRODUCTION

The prophetic tradition is identical to the hadith or sunnah in the manifestation of Prophet Muhammad's words (qauliy), deeds (fi'liy), and confessions (taqiriri). According to Azami (1992, p. 20), Prophet Mohammad discussed aqidah, sharia, and morals as well as comprehensive aspects in science, especially in pharmacy, treatment, medicine, and health issues. Results from previous studies showed that many of these hadiths were in line with scientific facts.

Islam's treatment method is named al-thibb-an-nabawiy, which means treatment by way of the Prophet Muhammad. Muslim healers followed Prophet Muhammad and were guided by the Qur'an and hadith on issues like adjusting diet and drinking water. Muhammad SAW consumes honey, whole milk, dates, and black cumin seeds for treatment and health benefits. Also, the

guidance of treatment was often discussed in Prophet Muhammad's hadiths.

During the development of hadith, experts and Muslim scientists took part in I'jaz ilmi (read: exposing the science of hadith). Zaghul al-Najjar, a well-known geology expert, made personal observations in a book entitled al-I'jaz al-Ilmi fi al-Sunnah al-Nabawiyah. Zaghul al-Najjar integrated modern science in understanding Prophet Muhammad's Hadiths. These integrations strengthened the validity of the Hadith in relation to scientific facts. However, Zaghul al-Najjar is not an expert in the field of Hadith and its knowledge. This makes the relevance of Hadith and science and a connecting line between Hadith's authenticity and scientific proof interesting aspects. The assumption is shown by

the elaboration of Zaghul al-Najjar in quoting Hadith.

Zaghul al-Najjar cited several scientifically credible Hadiths from literature, such as Sahih al-Bukhari and Muslim. However, other literature whose status still needs to be studied further was used. For instance, a Hadith reported from Sunan al-Kubra by al-Baihaqi from Ibn' Abbas was cited in the rain cycle theme (Ragab, 2012, pp. 657–673):

"No year has less rainfall than (any other) year".

Al-Baihaqi narrated this Hadith in al-Sunan al-Kubra (juz III / 363) from Ibn Mas'ud, reference from Prophet Muhammad text which stated that "No year has less rainfall than (any other) year".

A similar hadith was reported by al-Hakim in al-Mustadrak (juz II/403) from Ibn Abbas, stating that no year has more rainfall than any other, though it is Allah who controls.

The first Hadith text stops (mauquf) at Ibn Mas'ud, while the second only reaches Ibn Abbas. This weakens its status (dhaif) because many viewers cannot understand the scientific instructions, representation and breakthrough that preceded modern science in the past 1400 years. Furthermore, this Hadith is a representation of scientific miracles in the Prophet's Hadiths. Therefore, despite its dhaif status, it is strong and should be considered.

Research has proven that the volume of water on the earth's surface is approximately 1360 million km³. However, (97.20%) of the earth's is salt water found in seas and oceans, while the rest (2.80%) is fresh. There are several freshwater forms, including frozen, liquid, and % in carbonated (soda). Specifically, 2.15% of the total freshwater (2.80%) is in the form of snowflakes at both poles of the earth and mountains tops. The remaining 0.65% is stored in the crust's porocyte layers beneath the earth's surface in the form of stored water in lakes and ponds. Also, a given amount of 0.65% is stored in moist air on the ground, water vapor in the natural gas layer (atmosphere), and rivers.

Even though 14 centuries ago, the Hadiths of Prophet Muhammad have indicated these findings were only confirmed to a man in the 20th century.

"No year has less rainfall than (any other) year", (Mohammad Saw).

In other words, no year has more rainfall than (any other) year, but Allah controls it. Ragab (2012, pp. 657–673) stated that the Prophet's scientific facts could not have come from sources other than heavenly revelation.

Many controversies arise from information that shows the scholarship of science in the hadith, including in medical and non-Muslim parties who

do not acknowledge these truths. However, many Muslim scientists' studies established that hadith miracles could be tested scientifically. Therefore, this research will analyze well-known science Hadiths and discuss their phenomena in social life. This will be done by focusing on two points of view, including hadiths teachings and modern scientific study. Moreover, the two points of view will be limited to only 2 phenomena, including the wings of flies and camel urine treatment. There are several benefits of studying the integration between religion and science, include proving that there is no contradiction between Islamic texts and modern science. Secondly, to confirm that Prophet Muhammad's hadiths can only be understood with modern theories' help. Surah al-Hajj verse 73 and surah al-Ghasiyah verse 17 are the two research objects used because they are mentioned in religious texts (Al-Qur'an and hadith). Furthermore, the research explains how Islam views these two scientific phenomena, and they depict the relationship between religion and science.

Literature Review

Prophetic traditions, known as hadith, provide moral codes and Islamic laws. Zaghoul (2006) stated that hadith provide many clues and information about modern sciences in various fields. Bucaille (1979) provided many similarities between Islam and medical science. Furthermore, Al-Nasimi has written a three-volume book emphasizing the "Prophetic Medicine in Prophetic Traditions" (al-Tibb al-Nabawi wa al-Ilm al-hadith) (Ibrahim Musa et al., 2016). Zaghoul al-Najjar, an Egyptian scholar, is one of the most prolific Muslims in this field and has produced a series of medical science publications. Al-Mazri (1988) analyzed the consistency between modern medical sciences and Prophetic traditions in reference to Greek physicians such as Pedanius Dioscorides (90AD), Claudius Galenus (130AD) and Avicenna (1037AD).

It is believed that the Prophetic traditions contain many clues to science. However, it is logical to assume that much more knowledge is still unexplored and undiscovered (al-Ghazali, n.d., pp. 79–81). Therefore, this study explores the compilations of Prophetic traditions to provide clues in medical science.

METHODOLOGY

A qualitative study will be conducted to generate an index of Prophetic traditions on medical science. This textual study involves an analysis of text from Prophetic tradition. The hermeneutical approach will detect the relevance of the selected text to medical science. Furthermore, the study

will focus only on the hadith in Sahih al-Bukhari, an authentic scripture in Islam after the Qur'an, which has a specific chapter on "Prophetic Medicine".

The study will use Miles & Huberman (1994) approach, which involved four phases. Data reduction, or the first phase, is primarily a screening process that sorted out Prophetic traditions text related to medical science. This screening was conducted by a group of experts in the field. (ii) Data display will equip Prophetic traditions about medical sciences information based on the format prepared by medical experts and recognized by the Ministry of Science, Technology and Innovation (MOSTI) through "Malaysia Development Research Classification System". Prophetic traditions text will be compiled based on the three categories, including the directly connected, clear relationship but no scientific evidence, and vaguely relationship. Based on categories, semi-structured in-depth interviews were conducted to obtain the views of experts from medical fields. (iii) The Data verification phase will be an organization of seminars to discuss the selected and categorized views obtained through interviews and workshops. The data confirmed by experts will be compiled through indexing for easy reference and access.

RESULTS AND DISCUSSION

Hadiths about Science

The wings of flies that contain disease and antidotes

Several Hadiths related to the presence of an antidote on one side of a fly's wing. Flies might be the most disliked insects since they cause several diseases such as dysentery or stomach ailments. Many people try to keep these insects away from food and drinks. Furthermore, people often kill flies or traps with insecticides from drugstores. However, the hadith of Prophet Muhammad stated that one should immerse a fly in their food or drinks.

If a fly falls into your place (food or drink), immerse it, then throw it away because one wing has the disease and the other wing has an antidote. "(Al-Bukhari, 2002, p. 84)

The hadith about flies falling into ones drink has 4 narrator lines from the companions. Each of these companions has more than 50 sanad, each with the same essence and different word variation that does affect their meaning. The sanad about flies was narrated by ḥuffāz, figures who have strong memorization and mutqin, and thiqqah, highly reliable. Therefore, many scholars believe that the hadith about flies has very high levels of authenticity. Over the years,

none of the hadith narrators have been suspected of lying, falsifying, neglecting or having any influencing weaknesses. Furthermore, none of the hadith narrators are considered ḍa'if (weak). However, all of them are thiqqah and ḥāfiẓ narrators of hadith.

Treatment with camel urine

Urine is a liquid waste excreted from the body through the urinary tract (Muna et al., 2008, pp. 79–82). Urine excretion is essential because it removes waste molecules from the blood through kidney filtration, maintaining body fluid homeostasis. In maintaining body homeostasis, urine is used as a waster of fluids by the body through secretion. Normally, urine has 35 grams of organic material and 25 grams of inorganic in a 24hrs duration. Urine composition reflects the kidney's ability to retain and absorb substances essential for basic metabolism.

The camel urine treatment is mentioned in at least 4 hadith books, including Sahih Bukhari and Muslim, Sunan at-Tirmizi, and Musnad Ahmad ibn Hanbal. Sahih Bukhari (al-Bukhari, 2002, p. 123) from Musa bin Ismail, Hammam, Qatadah, and Anas, stated that a group of people was suffering from illness while they were in Medina. The Prophet ordered them to drink camel milk and urine and healed afterward. They killed the shepherd and robbed the camels. The Prophet pursued them, cut off their hands and feet and pulled out their eyes. Qatadah commented that according to Muhammad bin Sirin, the incident occurred before the revelation of the verse about hudud (punishment).

According to al-Qaradawi (2012, p. 46), the camel urine hadith on treatment needs to be interpreted textually and contextually. The past experience of drinking camel urine resulted from desperation due to an emergency or a life-threatening. An emergency happens when something life-threatening occurs. For this reason, sickness cannot be perceived to be an emergency. Therefore, it is vital to consult a health professional to determine whether an illness threatens a person's life and safety.

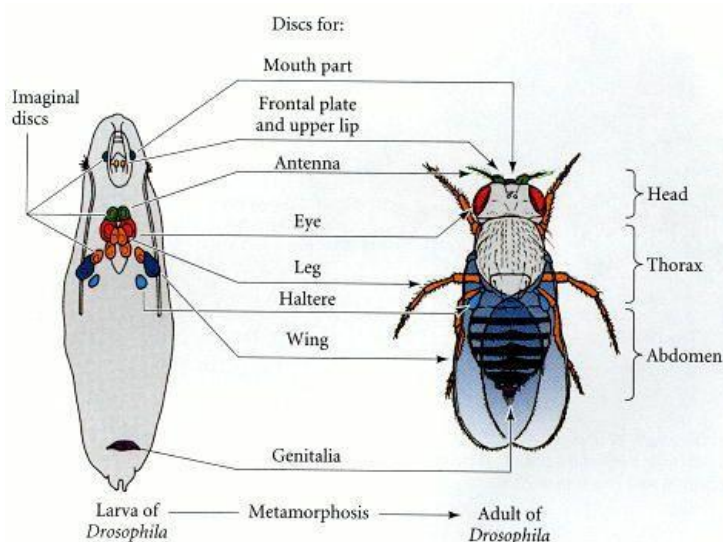
Imam Hanafi stated that all types of urine are unclean, whether from animals that can be consumed or not. However, several types of urine are categorized as heavier. The urine of all consumable animals, such as horses, goats, camels, and cows, does not make clothes unclean, though the prayers performed at that time should not be repeated. However, in large quantities, the clothes affected become unclean, and prayers need to be repeated (al-Zuhayli, 1985).

Imam Ahmad ibn Hanbal agrees with Imam Malik assertion that urine and feces of an animal whose meat can be eaten, such as camels, cows, goats, chickens, doves, and all types of birds, are sacred (al-Zuhayli, 1985).

Imam Syafi'i allowed treatment with camel urine but was limited in an emergency. This may include when the person is sick, declared by an expert or based on experience with the disease. Only a few people recover from the disease unless they eat or drink from what the expert said (al-Syafi'i, 2001).

These statements indicate that the hadith allowing camel urine to be part of treatment is justifiable. It is not against common sense because several studies have found its benefits. Furthermore, the use of urine does not contradict the successive hadith because the proponents for the narration of Ahmad ibn Hanbal are very strong. It does not contradict the Qur'an because it is not explicitly explained in it, apart from being supported by the opinion of ulemas.

Scientific Facts About Medical Findings in Hadith Flies wing scientific facts



The flies' life cycle consists of four different phases, including eggs, larvae, pupa, and adult flies. During the laying period, a fly can release 1,200 - 1,500 eggs. In some cases, these eggs can hatch after 24 hours of becoming a larva. House flies can reach a distance of 15 km in a 24 hour period. Most flies remain within a radius of 1.5 km from their breeding grounds, although in some cases, they can travel up to 50 km from their place of origin. In general, flies can be divided into four.

- a) The housefly, known as *Musca Domestica*, often causes various diseases in humans. They like trash cans, animal feces, and humid places with food potential for their larvae. Their morphological characteristic includes a blackish gray body with a yellow-orange belly and blackish-brown belly tip (Buenaventura et al., 2021).
- b) The small house fly, called *Fannia sp*, resembles the house fly but is smaller in size and often bites. They breed in animal and human excrement or rotting plants. These

flies play a role in transmitting the disease to animals but not humans (Rocha et al., 2020).

- c) Bottle and blowflies only live for about 27 days from egg to adult. The first 16 hours are in the form of eggs, 24 hours at larvae level 1, 20 hours were larvae level 2, and 48 hours at larvae level 3. The pupa is the longest period in the life of this fly, specifically 14 days. Furthermore, the flies mature and live up to approximately 8 days. The 27 days is influenced by temperature and the source of food in which they live. In many cases, they lay eggs on meat and usually breed in decaying animal bodies or plants. Their larvae can cause myiasis in animals and humans (Shah et al., 2015, p. 322).
- d) Meat flies have a larger body than others, with spots on the ends of their bodies. These fly larvae live in meat, although they can also grow in animal waste and cause myiasis in humans (Nabeshima et al., 2020).

Although flies are often identified with feces and places filled with pathogens, they have an

advantage in innate immunity. This is one reason why they stay healthy despite living in a very dirty environment.

Another distinctive feature of flies is the way they digest food. Unlike other living organisms, they do not digest food inside their mouths but outside their bodies. Flies pour a special liquid to the food with a proboscis and change its thickness to be suitable for absorption. Furthermore, they absorb the food with an absorbent pump in their esophagus (Norouzia et al., 2020).

Similar to other types of insects, flies also have eyes equipped with thousands of hexagon lenses, providing a larger field of vision than ordinary lenses. According to studies, some flies have up to 5000 lenses. Furthermore, the eye's round structure also allows them to see behind the body, giving them an edge over enemies (Leonel et al., 2020). A fly can process all the information it gets from its thousands of eye lenses and maps them into its brain in just 1/10 second. This is what makes them move quickly when caught by their predators (al-Kaḥīl, n.d.).

Of all the insects globally, flies are among the most widely distributed, with not less than 87,000 species. Therefore, their percentage of human places is very large. There is no place where humans live, and flies cannot be found. It is not surprising that one of the Prophet's hadiths talks about flies, especially related to the food or drink infested.

Camel urine scientific facts

There was a MERS (Middle East Respiratory Syndrome Coronavirus) virus in 2012. WHO (World Health Organization) stated that the MERS virus caused 79 deaths during 2012, mainly in Saudi Arabia (Dallas, 2018). MERS is a disease almost similar to SARS (Severe Acute Respiratory

Syndrome) and comes from the common cold. However, it is not as severe as SARS, which has more risk of death (Abdel Gader & Alhaider, 2016, pp. 98–103). Studies show that MERS currently spreads to humans very easily. According to the disease control and prevention center, the MERS virus attacks the respiratory system, causing fever, cough, pneumonia attacks, kidney failure, and impaired liver function. WHO stated that other symptoms caused by the virus attack the stomach and intestines, such as diarrhea. According to the CNN Indonesia news page, research conducted in 2010 and 2013 shows that camels are diseases that spread agents. However, it is not clear how the virus can be transmitted from camels to humans. The World Health Organization (WHO) recommends avoiding contact with camels, consuming raw camel meat and drinking its milk or urine (Abdel Gader & Alhaider, 2016, pp. 98–103).

A study shows that MERS is ubiquitous in young camels, though there is no evidence of it spreading from camels to humans. There is a need for study research to clarify this issue. Long-term surveillance is needed to determine the circulation of the MERS virus in camels, quoted from W. Ian Lipkin, Columbia University in New York City, in a news release from the American Society for Microbiology (Dallas, 2018).

One-hump camel urine has been used for various medical purposes for centuries in several Arab countries. Its use has become a solution for every problem related to skin, hair, and internal diseases. In Yemen, people use camel urine to treat various wounds, including burns. Its use involves drying the urine in the hot sun and leaving it until the shape changes to round or flat granules (Aqib et al., 2019, pp. 497–504).

Table of camel urine content within 24 hours (Read, 1925):

	Gm	Gm.N	Total N in percent
Total N	8.7	-	-
Ammonia	0	0	0
Urea	Very low	Very low	0
Total creatinine	9.24	3.43	39.4
Keratin	3.97	1.27	-
Hippuric Acid	39	3.05	35.1
Purine Base	4.7	1.73	19.9
Chloride	7.99	-	-
Total			94.4

Ahmad Abdullah Ahmadani stated that patients using sound waves with chronic liver disease. Furthermore, Ahmad provided treatment to all

patients for two months with camel urine. Studies prove that camel urine contains a lot of potassium, albumin (egg white substance), and

magnesium. Ahmad Abdullah stated that ascites are caused by a deficiency of albumin and magnesium, richly found in camel urine. Young camels yet to be pregnant have the best urine for use in medicine are young camels (M. et al., 2016, pp. 26–31).

Ahlam al-Audhi examined the use of urine in medicine in collaboration with Nahid Haikal, a lecturer in the Science Department, Faculty of Education (Female Campus) in Jeddah. Camel urine was used to treat fungal skin diseases and kill the TB virus. Ahlam is also the thesis supervisor of Manna' al-Qaththan that has successfully proven the effectiveness of a concoction made from camel urine as an antibiotic and meet international standards (al-Zuhayli, 1997, p. 28).

Ahlam al-Audhi stated that antibiotic concoctions from camel urine are cheap, easy to make, and have an effective medicinal effect in treating skin diseases, such as eczema, sensitive skin, wounds, burns, acne, nail infections, and hepatitis. Antibiotics derived from camel urine are not dangerous when stored in high temperatures, unlike other antibiotics. Camel urine has high salinity with low urea levels, hence it cannot cause poisoning. Therefore, camels are advantageous over other creatures in medicine (al-Ghamdi & Korshid, 2012).

Muhammad Auhaj Muhammad, a chemical engineer, studied "Chemical Components and Medical Use of Arabian Camel Urine". This thesis discussed the history of treatment with camel urine over the centuries. Medical experiments were conducted on thirty patients with ascites. The treatment was successful using laboratory concoctions whose components consist of camel urine. The following observations were made.

- a. Camel urine has a high level of osmolality compared to goat, cow, and human urine.
- b. Camel urine works like a substance that increases the urine (diuretic) formation of patients given medication. However, it does not affect blood potassium levels like other diuretics.
- c. Camel urine contains a lot of potassium and protein.
- d. Camel urine has clear medicinal effects on several diseases caused by bacteria and viruses.
- e. Camel urine is used to treat clots in blood vessels because it can break down fibrin, the clotting substance.

The study concluded that scientific evidence confirms the Prophet's hadith on the benefits of treatment with camel milk and urine (Al-Awadi & Haikal, 1997, pp. 181–211).

Ibn Sina and ar-Razi were two ancient doctors popular in treating their patients with camel urine. Ibn Sina believed that the urine of adult Arabian camels, called lajib, effectively cures a swollen spleen (splenomegaly). In modern times, camel urine in the Arabian desert and Kuwait has also been used to treat leukemia and stomach cancer. Apart from containing antibiotics, it has a high immune system level to eradicate fungi, bacteria, and viruses (Ramli, 2017, pp. 540–555).

Fathen A Khorshid, a research lecturer at King Abdul Aziz University (KAAU) and President of Tissues Culture Unit at the King Fahd Medical Research Center, with Alee Khedr stated that "Relatively high concentrations of bioactive materials were found in camel urine, including phenol, p-cresol, cinnamic acid, salicylic acid, and azelaic acid. These compounds are separately exhibit antiseptic, anti-inflammatory, anti-acne, antiscabies, and anti-cancer effects. The high concentration of p-cresol and azelaic acid, relative to known doses, confirms the antibacterial activities". (Khedr & Khorsid, 2016, pp. 680–687).

Salwa M. E. Khogali, from the Department of Biochemistry, Nutrition, Toxicology and Pharmacology, Central Veterinary Research Laboratory in Sudan, stated that "Clinical studies on camel urine were recorded. The results of these experiments proved that the urine consists of many bioactive complex compounds that act against bacterial, parasitic, and carcinogenic agents, and has the ability to protect the liver against toxic agents" (ME Salwa et al., 2016, pp. 1–5). "Butanoic and Acetic acid also have an antimicrobial effect. Benzoic acids and their esters are used externally as antiseptics, lotions, ointments, creams, and mouthwashes. It is more effective as a preservative in foods and pharmaceutical products. Benzoic acid is an antiseptic but irritating, hence used only externally. It is used in the treatment of burns, frostbite, chaps, cracks, erythema, pruritus, ulcers, infected dermatitis and other minor wounds. "It has an antifungal effect, octadecatrienoic acid, and Vitamin E, which contributes to activities, such as antimicrobial, antioxidant anti-cancer, hypercholesterolemic, antiulcerogenic, and other activities. Furthermore, Butylparaben 27.71% have an antimicrobial effect (ME Salwa et al., 2016, pp. 1–5).

The publication of Najoud al-Yousef in the Journal of Ethnopharmacology in 2012 (al-Yousef et al., 2012, p. 819) shows that camel urine is widely used in the Arabian Peninsula to treat cancer. In-vitro, camel urine kills human cancer cells. Consuming 216 mg/ml of camel urine dried by freeze-drying inhibits the

development of cancer cells. Abdul Qader al-Haider also published the research results in the *Journal of Ethnopharmacology*, which stated that the urine of virgin, pregnant, and lactating camels could inhibit the induction of Cytochrome. Furthermore, the P450 1A1 gene expression impedes the growth of human cancer cells. The highest inhibition level of cancer cells is shown by virgin camel urine, followed by lactating and pregnant camel urine (Ahmad et al., 2017, pp. 23–29).

Therapy that involves drinking camel urine was studied by Ahmad Abdullah Ahmadani, Dean of the Medicine Faculty, Jazirah University in Sudan. The experiment began by giving each patient a certain dose of camel urine mixed with milk every day. After fifteen days, all the stomachs of the study object were deflated and regained normalcy. The patient recovered from abdominal swelling (ascites). Ahmad Abdullah Ahmadani also stated that every patient diagnosed before starting the study had sound waves (ultrasound). The livers of 15 out of 25 patients had waxy substances, and some had liver fibrosis due to filariasis disease. All patients were willing to be treated using camel urine. Some study subjects continued to drink camel urine with a certain dose every day during the last two months. At the end of the period, the diagnosis showed that they were all cured of liver fibrosis (Al-Jedabi, 1999, pp. 146–166). In the book *Naṣa'ih Nabawiyah li' ilâji al-Ajsâdi al-Basyariyati*, Subhi Sulaiman stated that three tablespoons of urine should be taken, preferably virgin camels and pastured from wild plants. It should be mixed with a glass of camel milk and drunk on an empty stomach (al-Sattar, 1991).

Scientific Analysis of Science Hadiths

Analysis of the hadith about the wings of flies that contain disease and antidotes

Doctor Juan Alvarez Bravo succeeded in increasing the dignity of the dirty animal. According to "The Economist", a wide variety of antibiotics can be extracted from the fly's body. The discovery originated from trivial observations that questioned why fly larvae (maggots) could survive in a trashy environment full of germs. Attention was drawn to the greenfly *Sarcophaga peregrina*, which often swarm over rotten meat. From the insect's stomach, Juan Alvarez found six kinds of antibiotics, including SapecinB, a chemical compound with 34 amino acid groups. Flies contain antibiotics in their stomachs. *Musca domestica* (housefly) and other flies may contain several antibiotics in their stomach. Flies ingest pathogens (bacteria and viruses) and do not die because they have an antidote. The poison on the

left-wing defends itself from enemy attacks, while the antidote on the right-wing ensures the safety of other creatures tainted with poison. According to Shope (1927) and Glaser (1938), the house fly (*Musca domestica*) contained a bacteriophage virus that can kill the germs of *Staphylococcus muscae*, *Escherichia coli*, *Salmonella paratyphi*, and *Eberthella typhosa*. For this reason, the following conclusion can be made.

1. Most microparticles of organisms, such as germs, viruses, microbes, fungi (mycosis/alfuthri), and parasites (al-Thufailiyat) in flies' body cause several diseases.
2. The fly's immersion in every liquid infested inhibits the development of organism's microparticles to other parts of the fly's body. Therefore, the process of drowning flies in liquid kills the microparticles of organisms that cause disease.
3. Suppose there is food or drink infested by a fly, and then the fly leaves without immersing it completely. The food and drink will be contaminated with microparticles of organisms. However, if the fly is immersed in a drink or food, it will hold and kill microparticles of organisms that can cause disease, making them safe for consumption (Al-Mekhlafi et al., 2020, pp. 3111–3118).

According to the parity theory and the symmetric universe, it is vital to remember that everything has a partner, observed from everyday phenomena. Day has a partner, specifically night, dark with light, good with bad, big and small, and diseases and antidotes (al-Hajjaj, 2000, p. 21). The text of the hadith is:

Every disease has an antidote. Therefore, if the antidote is correct, the disease will be cured with the permission of Allah. (HR. Muslim)

Based on the literal meaning in the hadith, a Muslim should build a foundation of thinking that every disease has an antidote. However, not all of the drugs found are in line with the disease. Therefore, humans have the responsibility of experimenting to determine drugs that match each of the disease criteria.

In case there is a hadith explaining that a fly always contains disease, it should not be denied. This is because flies usually live in dirty places, a nest of bacteria or viruses. When a fly lands, the bacteria or virus can easily stick to any part of its body. However, the same hadith states that flies always carry dirt and disease but have an antidote and cure.

In 1927, Richard E. Shope, MD, studied good bacteria (Bacteriophage) produced by house flies. In his experiment, a sample of 1,000 flies divided into 10 heads for every cc of various solutions

was used. Each solution was placed at freezing temperature before being used as an experimental medium. The bacteria used in the experiment were *B. Coli* and *B. Paratyphi* type 1 of Guinea pig origin. The media was observed at 6 and 24 hours. After the experiment, the body of the flies immersed in the liquid contained substances that could inhibit the growth of *B. Coli* but had little effect on *B. Paratyphi* Type 1 and *Staphylococcus*, among others. These experiments show that the liquid immersed with all the fly's body would transfer the good bacteria from the flies, a destroyer of pathogens and an inhibitor of bacterial growth. Each type of bacteria has a different time span before destruction by the substance contained in flies (Shope, 1927, pp. 1037–1044).

Laboratory experiment report conducted by Nabīh Ba'shān, Manṣūr Sujainī, Abd al-Wahhāb Abd al-Ḥāfīz, and Muḥammad Zakī - in biology at the Faculty of Science, Malik Abd al-Aziz University, states that:

In one experiment, two water glasses whose Ph was measured to 4 (the average Ph of a human stomach) was prepared. Each of the glasses was dripped with live microbes. However, one of the glasses was dropped with a fly, which was then lifted without drowning. Another glass was also dropped with a fly and drowned for 60 seconds, then thrown away.

The two glasses were then tested for their microbial growth rate. The first glass dropped with a fly and immediately thrown away had a very high microbial growth rate. It included microbes introduced at the beginning of the experiment and new ones intentionally inserted into the glass. In the second glass, the number of microbial growth drastically reduced with no new types of microbes. This experiment was also carried out with several different media by adding temperature levels that allowed microbes to develop rapidly. Each of these experiments indicated that the substances dropped with a fly without the immersion process had a significant difference in the number of microbes, compared to the ones dropped with a fly and immersed shortly before disposal (Khāṭir, 1405, pp. 169–170).

A similar study was conducted by the Team from the Department of Medical Microbiology, Faculty of Science, Qashim University, in the Kingdom of Saudi Arabia. The research focused on the microbiological analysis of fly wings and presented it at the "Student Research Seminar" at Qassim University. The method used involved cultivating (growing) sterile water dipped by flies in the media to identify the growing microbes. Several species of flies were used. Furthermore,

two samples were used for each species, including (1) a sterile water sample inserted by a fly and dipped completely and (2) a sterile water sample where the fly was inserted in a similar way, but only the wings were dipped. All of this is carried out aseptically (free of microbes) in a special room to avoid external contamination, which biases the research results (Al-Mekhlafi et al., 2020, pp. 3111–3118). The results were as follows

Cup 1: water culture sample from a tube containing sterile water completely immersed by the fly (the whole body immersed).

Cup 2: water culture sample taken from a tube containing sterile water dropped with a fly without immersing it (only its wings immersed).

In cup 2, the media was overgrown by pathogenic bacterial colonies of *E. Coli*, which cause various diseases, including diarrhea. In cup 1, small colonies of *E. coli* appeared first, but their growth was inhibited by micro-organisms, specifically *Actinomyces* bacteria, which can produce antibiotics. These bacteria usually produce antibiotics that can be extracted, including actinomycetin and actinomycin. They inhibit the development of bacteria and have antibacterial and antifungal properties.

Analysis of the hadith about treatment with camel urine

The use of camel urine has long been discussed by previous Muslim scientists, including Ar-Razi, Ibn Sina, Ibn Taimiyah, and Ibn Qayyim al-Jauzi. Recently, scientists have also studied camel urine, such as the publication of Najoud Al Yousef in the *Journal of Ethnopharmacology* in 2012 (al-Yousef et al., 2012, p. 819), which shows that camel urine has been widely used in the Arabian Peninsula for treat cancer. In-vitro, camel urine kills human cancer cells. Consuming 216 mg/ml of camel urine dried by freeze-drying inhibits the development of cancer cells.

Abdul Qader Al-Haider's research published in the *Journal of Ethnopharmacology* stated that the urine of virgin, pregnant, and lactating camels inhibit the induction of Cytochrome P450 1A1 gene expression. For this reason, the growth of human cancer cells can be inhibited. The highest level of cancer cell inhibition was shown by a virgin's urine, followed by lactating and pregnant camels (Ahamad et al., 2017).

Fathen A Khorshid, a research lecturer at King Abdul Aziz University (KAU) and President of the Tissues Culture Unit at the King Fahd Medical Research Center, with Alee Khedr stated that the chemical composition contained in camel urine include organic nitrogen, ammonia, urea, creatinine, creatine, hippuric acid, chloride, and

benzoic acid. Relatively high concentrations of bioactive substances found in camel urine include phenol, p-cresol, cinnamic, salicylic, and azelaic acids. These compounds exhibit antiseptic, anti-inflammatory, anti-acne, anti-scabies, and anti-cancer effects. High concentrations of p-cresol and azelaic acid are anti-bacterial agents (Khedr & Khorsid, 2016, pp. 680–687).

Ahmad Abdullah Ahmadani, dean of the Medicine Faculty, Jazirah University in Sudan, conducted a scientific experiment using camel urine to treat the liver and its tissue's chronic diseases. The experiment showed that disease causes abdominal swelling (ascites) (Muna et al., 2008, pp. 79–82).

Ahlam al-Audhi and Nahid Haikal, a Lecturer at the Department of Science, Faculty of Education in Jeddah, used camel urine to treat fungal skin diseases and kill the TB virus (Mostafa & Dwedar, 2016, pp. 1–6).

Camel urine has many benefits, especially in the health sector. There are various kinds of treatment methods, including urine mixed with milk, dried urine, or drinking pure urine. In the hadith on camel urine that discusses the Ukl and Urainah tribes, there is a narration of Kutub As-Sab'ah, including Imam al-Bukhârî, Muslim, Abu Dawud, Tirmizi, an-Nasâî, Ibn Mâjah, and Ahmad ibn Hanbal. This hadith's position is valid because it is contained in the narrations of Sahih al-Bukhârî and Muslim.

CONCLUSION

The wings of flies and camel urine were discussed by the Prophet about 14 centuries ago. However, it was only revealed in the last centuries after science and technology developed rapidly.

The Prophet's command to immerse a fly's wing when the one side falls in a cup (glass) is in line with the scientific finding that flies' wings contain the disease and its antidote. Furthermore, the command for treatment with camel urine is in line with the scientific finding that camel urine contains organic nitrogen, ammonia, urea, creatinine, creatine, hippuric acid, chloride, and benzoic acid. Relatively high concentrations of bioactive substances were found in camel urine, including phenols, p-cresol, cinnamic acid, salicylic acid, and acacia azelaic. These compounds exhibit antiseptic, anti-inflammatory, anti-acne, anti-scabies, and anti-cancer effects. However, consuming camel urine can be consumed during an emergency in Islam.

Acknowledgments

The authors express gratitude to the journal editors that read and selected this article.

Conflict of Interest

The authors declare no conflict of interest.

REFERENCES

1. Abdel Gader, A. G. M., & Alhaider, A. A. (2016). The unique medicinal properties of camel products: A review of the scientific evidence. *Journal of Taibah University Medical Sciences*, 11(2), 98–103. <http://dx.doi.org/10.1016/j.jtumed.2015.12.007>
2. Ahamad, S. R., Alhaider, A. Q., Raish, M., & Shakeel, F. (2017). Metabolomic and elemental analysis of camel and bovine urine by GC–MS and ICP–MS. *Saudi Journal of Biological Sciences*, 24, 23–29. <http://dx.doi.org/10.1016/j.sjbs.2015.09.001>
3. al-Bukhari, I. (2002). *Al-Jami' al-Sahih wa huwa al-Jami' al-Musnad al-Sahih al-Mukhtasar min Umur Rasullillah Sallallah' alaih wa salalam wa Sunanih wa Ayyamih, "tahqiq": Mustafa Dayb al-Bagha*. Dar Ibn Kathir al-Yamamah.
4. al-Ghamdi, Z., & Korshid, F. (2012). Cytotoxicity of the Urine of Different Camel Breeds on the Proliferation of Lung Cancer Cells. *Journal of Nature Science Research*, 2(5).
5. al-Ghazali, A. H. (n.d.). *The Incoherence of The Philosophers (Tahāfut al-Falāsifah)*. Dar al-Ma'arif.
6. al-Hajjaj, M. (2000). *Sahih Muslim (Vol. 7)*. Dar al-Jail.
7. al-Kaḥīl, A. al-Dā'im. (n.d.). *Al-Mausūah al-Muṣawwarah li al-Ijāz al-Ilmī fi al-Qur'an al-Karīm wa al-Sunnah al-Muṭahharah*. www.kaheel7.com
8. al-Mazri, M. A. (1988). *Al-Mu'lim bi Fawaid al-Muslim (2nd ed.)*. Bayt al-Hikmah Publishing.
9. al-Qaradawi, Y. (2012). *Al-Halal wa al-Haram fi al-Islam*. Maktabah Wahbah.
10. al-Sattar, Abd. (1991). *Buhuth fi al-Fiqh al-Tibb wa al-Sihhah al-Nafsiyyah min Manzur Islami*. Dar al-Aqsa.
11. al-Yousef, N., Gaafar, A., al-Otaibi, B., al-Jammaz, I., al-Hussein, K., & Aboussekhra, A. (2012). Camel urine components display anti-cancer properties in vitro. *Journal of Ethnopharmacology*, 143, 819. <https://doi.org/DOI: 10.1016/j.jep.2012.07.042>
12. al-Zuhayli, W. (1985). *Al-Fiqh Islami wa Adillatuhu*. Dar al-Fikr.
13. al-Zuhayli, W. (1997). *Nazariyyah al-Darurah al-Shari'iyah*. Dar al-Fikr.
14. Al-Awadi, A., & Haikal, N. (1997). Features of the scientific miracles of the Prophetic medicine regarding the camel urine activity against one of pathogenic fungi. 181–211.
15. Al-Jedabi, A. (1999). Studies on the antifungal activity of camel's urine against some of the pathogenic fungi, for revealing of the scientific miracles in the Prophetic Sunnah. [Master

- Thesis]. The education college of the scientific department.
16. Al-Mekhlafi, F. A., Alajmi, R. A., Almusawi, Z., Abd Al Galil, F. M., Kaur, P., Al-Wadaan, M., & Al-Khalifa, M. S. (2020). A study of insect succession of forensic importance: Dipteran flies (diptera) in two different habitats of small rodents in Riyadh City, Saudi Arabia. *Journal of King Saud University – Science*, 32, 3111–3118. <https://doi.org/10.1016/j.jksus.2020.08.022>
 17. al-Syafi'i, M. ibn I. (2001). *Al-Umm. Dar al-Wafa*.
 18. Aqib, A. I., Kulyar, M. F.-A., Ashfaq, K., Bhutta, Z. A., Shoaib, M., & Ahmed, R. (2019). Camel milk insuline: Pathophysiological and molecular repository. *Trends in Food Science & Technology*, 88, 497–504. <https://doi.org/10.1016/j.tifs.2019.04.009>
 19. Azami, M. M. (1992). *Studies in Hadith Methodology and Literature*. America Trust Publication.
 20. Bucaille, M. (1979). *The Bible, The Quran and Science*, trans. AD Pannel. North American Trust Publisher.
 21. Buenaventura, E., Valverde-Castro, C., & Wolff, M. (2021). New carrion-visiting flesh flies (Diptera: Sarcophagidae) from tropical dry forests of Colombia and their phylogenetic affinities. *Acta Tropica (Journal Pre-Proof)*, 213. <https://doi.org/10.1016/j.actatropica.2020.105720>
 22. Dallas, M. E. (2018). HealthDay Reporter [Article]. <https://health.usnews.com/health-news/articles/2014/02/25/mers-virus-that-threatenshumans-also-found-in-camels>
 23. Ibrahim Musa, Z., Yusoff, A. M., Omar, A. T. S., Amin, M. Z. M., Mohamad, K. A., & Kauthar, A. K. (2016). The Relationship of Quranic Guidance in Muslims Practices with Hormones Cycles. *International Conference on Integration of Naqli and Aqli Knowledge Quran and Sunnah (INAQ2016)*, Istanbul, Turkey.
 24. Khātir, K. I. M. (1405). *Al-Iṣābah fī Sihḥah Hadīth al-Dhubābah. Dār al-Qiblah li al-Thaqāfah al-Islāmiyyah*.
 25. Khedr, & Khorsid, F. (2016). Characterization and Determination of Major Bioactive Acids in Camel Urine Using Gas Chromatography Mass-spectrometry. *Indian Journal of Pharmaceutical Sciences*, 78(5), 680–687. <https://doi.org/DOI:10.4172/pharmaceutical-sciences.1000168>
 26. Leonel, J. A. F., Vioti, G., Alves, M. L., Tiago da Silva, D., Meneghesso, P. A., Benassi, J. C., Pereira Spada, J. C., Galvis-Ovallos, F., Soares, R. M., & Sousa Oliveira, T. M. F. de. (2020). DNA extraction from individual Phlebotomine sand flies (Diptera: Psychodidae: Phlebotominae) specimens: Which is the method with better results? *Experimental Parasitology*, 218. <https://doi.org/10.1016/j.exppara.2020.107981>
 27. M., A., Alyahya, M. Abdel Gader, A. G., & A. Alhaider, A. (2016). Characterization of Inhibitory Activity of Camel Urine on Human Platelet Function. *Journal of Taibah University Medical Sciences*, 11(1), 26–31. <http://dx.doi.org/10.1016/j.jtumed.2015.10.005>
 28. ME Salwa, K., MA bdalla, E., Mohamed, S. A., & Barajob, A. E. (2016). Novel Compounds in Lyophilized Female Camel Urine. *Journal of Infectious Diseases & Therapy*, 4(5), 1–5. <https://doi.org/doi:10.4172/2332-0877.1000296>
 29. Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook (II)*. Sage Publications.
 30. Mostafa, M. S., & Dwedar, R. A. (2016). Antimicrobial activity of Camel's Urine and Its Effect on Multidrug Resistant Clinical Bacterial and Fungal Isolates. *British Journal of Pharamaceutical Research*, 13(4), 1–6. <https://doi.org/10.9734/BJPR/2016/29342>
 31. Muna, E. A., Abdalla, & Hadya, E. A. (2008). Bacteria Associated with Healthy Sudanese Camel Urine and Susceptibility of Some Bacteria of Human Origin to Camel Urine. *Sudan Journal of Veterinary Research*, 23, 79–82.
 32. Nabeshima, K., Sato, S., Kabeya, H., Komine, N., Nanashima, R., Takano, A., Shimoda, H., Maeda, K., Suzuki, K., & Maruyama, S. (2020). Detection and phylogenetic analysis of Bartonella species from bat flies on eastern bent-wing bats (*Miniopterus fuliginosus*) in Japan. *Comparative Immunology, Microbiology and Infectious Diseases (Journal Pre-Proof)*, 73. <https://doi.org/10.1016/j.cimid.2020.101570>
 33. Norouzia, B., Hanafi-Bojdb, A.-A., Moin-Vaziric, V., Noorallahid, A., & Azari-Hamidian, S. (2020). Ecology of sand flies (Diptera: Psychodidae, Phlebotominae) in a new focus of leishmaniasis in northern Iran. *Acta Tropica*, 212. <https://doi.org/10.1016/j.actatropica.2020.105649>
 34. Ragab, A. (2012). *Prophetic Traditions and Modern Medicine in the Middle East: Resurrection, Reinterpretation, and Reconstruction*. *Journal of the American Oriental Society*, 132(4), 657–673.
 35. Ramli, F. (2017). The Growth Inhibitory Potential and Antimetastatic Effect of Camel Urine on Breast Cancer Cells In Vitro and In vivo. *Integrative Cancer Therapies*, 16(4), 540–555.
 36. Read, BE. (1925). *Chemical Constituents of Camel's Urine*. <http://www.jbc.org/>
 37. Rocha, D., Medeiros da Costa, L., Caldas Pessoa, G. D., & Obara, M. (2020). Methods for detecting insecticide resistance in sand flies: A systematic review. *Acta Tropica (In Press, Journal Pre-Proof)*. <https://doi.org/10.1016/j.actatropica.2020.105747>
 38. Shah, B., Ali Khan, I., & Ahmed, N. (2015). Study on the Biology of Blowfly and the Food Consumption of Blowfly Maggots. *Journal of Entomology and Zoology Studies*, 3, 322.

39. Shope, R. E. (1927). Bacteriophage Isolated from the Common House Fly (*Musca Domestica*). *Journal of Medical Research*, 45(6), 1037–1044. <https://doi.org/doi: 10.1084/jem.45.6.1037>
40. Zaghoul, el-N. (2006). *Scientific Facts Revealed in the Glorious Qur'an. Selected examples from the area of Earth Sciences.* Shorouk Intl.Bookshop.