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# Insect According to the View of Linguistics Experts: Between Ibn Jarir al-Ṭabari and Ibn Umar al-Zamakhshari and Modern Studies About Insects in the View of Science

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## Abstract

This study is a study on insects according to the views of Ibn Jarir al-Ṭabari a, Ibn Umar al-Zamakhshari and modern research . This study objectives are also to see through the different opinion between these two scholars. The study of insects has become a study that is often done by researchers because of the uniqueness found in these insects. The insects found in this study were analyzed based on the study of language and a little study of the literature related to the modern study of insects. The results of the study found that the interpretation of insects, according to the views of these two scholars has the differences, such as in historical linguistics, pragmatics, and semantics. As a result of this discovery, it is known that differences in background will affect the way a person interprets something, even in the same field. In addition, the discovery of insects from the point of view of modern science is more focused on certain aspects, such as ticks, bees, flies, and termites, focusing more on the study of behavior and its pros and cons. This will

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indeed provide information about insects from a different point of view and with different knowledge.

**Keywords:** Ibn Jarir al-Ṭabari, Ibn Umar al-Zamakhshari, modern studies, insects, ticks.

## Introduction

Recently, studies on insects have become frequent focus of research. This is due to the fact that many rare species have yet to be properly identified (Noor Farikhah, 2023). Additionally, there are still gaps in insect-related studies that can be further explored in the existing literature. Among the popular and frequently scope of studied are studies like Ahmad Syukran's (2021), which focus on the benefits of insects, such as Ainul Yaqin's (2019), and studies on the discovery or distribution of insect species, such as Rabihah's (2022).

Comparative studies on insects have also been conducted by many researchers, especially in the field of science. For example, Ikhwan's (2004) comparative study on the decomposition rate and ecological succession of insects for animal carcasses of different sizes and species examined how decomposition depends on time and mass size. Another study by Tribuana S. (2007) compared the population of odonate larvae in several rivers in Penang and their relationship with habitat influence and water quality. The study found that odonate larvae were more abundant during the rainy season compared to the dry season due to ecosystem factors such as fish predation, which increases during the dry season when water levels are lower and larvae are more exposed.

However, there are still gaps that can be addressed from previous studies, such as a comparative study from the perspective of two scholars on insects, whether from an etymological, scientific, or psychological viewpoint.

This study is a comparative analysis of two scholars on insects. Ibn Umar al-Zamakhshari is a prominent figure in tafsir (Quranic exegesis) with a belief of the Mu'tazilah and a linguist who employs the method of ta'wil (interpretation) in his exegesis, Tafsir al-Kashāf. On the other hand, Ibn Jarir al-Ṭabari is also a notable figure in tafsir with a Sunni background and a linguist who also uses the method of ta'wil in his exegesis, Tafsir Ibn Jarir al-Ṭabari.

Studies on tafsir and comparison have long dominated the academic world; however, more specific studies can be conducted, such as comparative studies between two tafsir books written by two scholars focusing on certain matters.

This study will highlight the differences in interpretations put forward by each scholar. The justification for choosing this study is because both scholars use the method of al-Ta'wil in their interpretations. The differences in their interpretations are only influenced by their backgrounds.

## Literature Review

Researchers have extensively studied insects, often focusing on specific scopes such as thematic studies and source-based studies. This literature review is divided into two sections: Islamic studies and scientific studies.

Among the Islamic scholars who have conducted research on insects is Ahmad Syukran (2021). In his study, insect classification is divided into types such as ants, mosquitoes, grasshoppers, termites, butterflies, fleas, flies, bees, and beetles. The researcher then categorizes these insects into several themes found in the Quran, such as allegory, parable, teaching, comparison, storytelling, and exemplary tales. The study concludes that insects are mentioned in various themes in the Quran and Sunnah. Primary Islamic sources have mentioned the role of insects as a chain of life on Earth.

Muhammad Rizqi (2021) conducted a study on insects mentioned in the Quran from a scientific interpretation perspective. The study first explains insects from the Quranic perspective, emphasizing that Allah never neglects any creature, no matter how small or intricate. From these creations, humans gain knowledge, such as observing how birds fly and even the creation of fighter jets through biomimicry. The study also explores insects from a scientific viewpoint, such as insect anatomy. For example, the compound eyes of insects are made up of hexagonal ommatidia grouped together to form a single eye. Insects breathe through trachea located throughout their bodies, and most reproduce by laying eggs. Many insects have short-term memory that fades with new memories, except for bees, which are known to have good short-term memory for a few days, used for navigating to previously visited spots to collect honey. The study concludes by suggesting that upon observing the greatness of insects, humans may feel insignificant. The Quran's use of insects aims to illustrate the attitude of disbelievers who dismiss the Quran due to the small size of these creatures.

Muhammad Azim (2020), in his study, asserts that insects can also provide evidence in criminal law matters. They serve to determine the time of death, particularly within the first 48 to 72 hours. Forensic entomologists use Necrophagous insects to establish the minimum postmortem interval (mPMI). The study's findings suggest that insects can serve as qarinah (evidence) in any criminal case.

Research on the benefits of using insects in cosmetic products has been explored by Ainul Yaqin (2019). In his study, the benefits are categorized into three parts: necessity (daruriyah) when using insects for cosmetic surgery such as treating burnt skin or reconstructing damaged faces, need (hajiyyah) when used to correct defects caused by imperfections rather than purely for beauty, and enhancement (tahsiniyah) when treating facial issues like acne or black spots. Among the insects used in cosmetics are cochineal beetles, which produce red dye for lipsticks, slime from snails used for facial treatments, and crickets used to prevent aging. However, these beauty products must adhere to Islamic guidelines, such as being temporary, non-harmful, not used for vanity purposes, and not excessive. The study concludes that the use of insects is permissible as long as it adheres to these guidelines.

Another study on insects was conducted by Mohd Sukki (2012), focusing on the aspect of I'jaz analysis. The study discusses insects such as mosquitoes and flies. It concludes by demonstrating the greatness of Allah's power in creating intricate yet small creatures, visible to the human eye, capable of impacting humans positively or negatively. For example, Anophelesm mosquitoes can spread diseases like malaria, while flies carry various diseases caused by microorganisms such as bacteria, viruses,

protozoa, fungi, and nematodes. The researcher concludes that the discussion on insects, approached from the perspectives of language in the Quran and scientific perspectives, showcases elements of I'jaz not as an outdated concept but as one that evolves with modern state development.

Rabihah (2022) is a scientific researcher who studied the diversity and distribution of stick insects at different altitudes on Gunung Jerai, Kedah, Malaysia. The study identified 400 insects from 32 species, belonging to four families: Phasmatidae, Aschiphasmatidae, Lonchodidae, and Heteropterygidae, along with five subfamilies of stick insects. The Phyllidae family was not recorded due to its rare presence. Abrosoma festinatum was noted as the most abundant species on Gunung Jerai, with 15 rare species recorded at altitude L1.

J. Syari (2011) conducted research on the conservation of Sycanus dichotomus Stal, a predator insect of bagworm caterpillars in oil palm plantations, using two types of larvae: Corcyra cephalonica Stainton and Tenebrio molitor Linnaeus. The study found that the survival rate of Sycanus dichotomus Stal was higher when fed with T. molitor larvae compared to C. cephalonica, at 81% versus 76%, respectively. The research concludes that Sycanus dichotomus Stal can be successfully mass-reared in laboratories by feeding them T. molitor larvae.

However, this study focuses on contrasting scholarly interpretations of insects in the Quran based on different academic backgrounds.

## Methods

### Characteristic of Interpretation Between Scholars

In the comparison of Quranic interpretations concerning insects between these two scholars, the interpretation methods of the scholars are crucial to understand. Ibn Umar al-Zamakhshari has outlined several interpretation methods in translating the Quran. Among his interpretations are: 1)Influenced by the Mu'tazilah school of thought in his interpretations, 2)Interprets based on the validity of logical reasoning, 3)Rejects the apparent meaning of verses about shifā' (healing) and claims they pertain to magic, 4)Denies the literal meaning of Quranic verses that suggest the possibility of seeing Allah, as it contradicts his teachings, and strives to interpret these verses according to linguistic understanding, 5)Does not delve deeply into fiqh (Islamic jurisprudence) verses, and 6)Uses Isrāiliyyāt (stories from Jewish and Christian traditions) in his interpretations (Mahmud A., 2009).

Meanwhile, Ibn Jarir al-Ṭabari has outlined several guidelines in his interpretations, such as: 1)Using the isnad (chain of transmission) system, relying on statements from hadith, companions, and tābi'īn (followers), 2)Utilizing the tahlili (analytical) interpretation technique, which is based on sequence such as vocabulary, asbab nuzul (occasions of revelation), and narration, 3)Employing the approach of ta'wil (interpretation) in his exegesis, 4)Relying on linguistic analysis in his interpretations, 5)Using ancient Arabic poetry to explain meanings and 6)Considering interpretations from the perspective of fiqh (Islamic jurisprudence) and qiraat (recitations) (Bashar M. & ciṣam F, 1994)

## Conceptual Framework

This study employs a library research method by seeking two primary reference sources, namely 'Tafsir al-Kashāf' by Ibn Umar al-Zamakhshari and 'Tafsir Ibn Jarir al-Ṭabari' by Abu Ja'far Ibn Jarir al-Ṭabari, along with other supporting document sources (Tumin, 2020). The study primarily uses a content analysis approach based on the framework adapted from Huang (2022). It examines the source texts of the two scholars and conducts a comparative analysis. The differences between these two scholars will be the main findings of this study, in addition to examining the research through scientific sources.

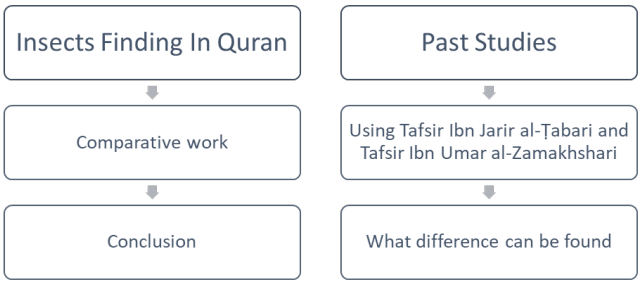


Figure 1: Methodology of the Study

## Result

### Insects Interpretations

There are 8 types of insects mentioned in the Quran:

1. Mosquito - Surah al-Baqarah (2:26)
2. Grasshopper - Surah al-Qamar (54:7) and Surah al-A'raf (7:133)
3. Lice - Surah al-A'raf (7:133)
4. Bee - Surah an-Nahl (16:68-69)
5. Fly - Surah al-Hajj (22:73)
6. Ant - Surah an-Naml (27:18)
7. Termite - Surah Saba' (34:14)
8. Moth - Surah al-Qari'ah (101:4)

From these verses, Ibn Umar al-Zamakhshari and Ibn Jarir al-Ṭabari with their references two main books which are Tafsir Ibn Jarir al-Ṭabari Min Kitābihi Jamici al-Bayān can Tacwili 'ayi al-Qur'ān by Bashar M. & ciṣam F. (1994) and Tafsir al-Kashāf can Ḥaqa'iq al-Tanwil Wa cuyūni al-'aqawīli Fi Wujuḥi al-Ta'wil by Mahmud A. (2009).

The findings of the study elaborate on the interpretations provided by these scholars based on the contexts of the mentioned verses.

Mosquito

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| Ibn Umar al-Zamakhshari | Disbelievers reject and mock this verse, questioning why a lowly insect like a mosquito is used as an example in the Quran, while believers understand that any example given by Allah is appropriate. It is indeed strange that disbelievers use animals, insects, birds, and desert snakes as examples to compare something lowly. These comparisons are still used in both urban and rural Arab contexts. When Allah gave examples such as spiders and flies, the polytheists mocked these verses. Allah then gave this example, which embarrassed the polytheists. Here, "embarrassment" in this verse is merely an example, as understood from the hadith of the *Prophet Muhammad S.A.W.*, where it is stated that Allah would be hesitant if His servant raised his hands and then refused them, unless it was to give something good to His servant. This raises the question of whether Allah would be embarrassed to give an example such as spiders and flies, so Allah brought a comparison (*muqabalah*) and opposition (*iṭbāq*) with it. *Ibn Kathir* mentioned that "ما" here is ambiguous, meaning that if paired with the indefinite noun (*nakirah*), it would be vague, random, or general, or it could be for emphasis, meaning that Allah would certainly not be ashamed to give such an example. The derivation of the word "البعوض" from "البعض" means a piece or part of which it is used as an adjective like the word "القطوع" (cuttings). From this, it gives two meanings, namely by giving emphasis to meanings that imply insults and the second means a part because the mosquito is smaller than flies and spiders and from the size aspect. |
| Ibn Jarir al-Ṭabari | This verse was revealed after Allah described the hypocrites' behavior without using a similitude in the preceding verse, then Allah gave a similitude for their arrogance. In another verse, Allah has given a similitude for their lord like a spider and another similitude like a weak and mean fly. Allah also gave these similitudes to show that Allah is not ashamed to give similitudes, whether they are small or large. Allah says that He is not ashamed (يستحي) in this verse, meaning He is not afraid. The phrase "ضرب لكم مثلا" means describing, and the word "ما" following it means "الذي" (which). When this verse is interpreted, it becomes "إن الله لا يستحي أن يضرب مثلا الذي هو بعوضة", meaning "Indeed, Allah is not ashamed to give a similitude, which is a mosquito." "فما فوقها" (and something less than it) is used in this similitude because a mosquito is the weakest creature and if it were larger than that, it would indicate it is stronger. |
| Modern Research | Mosquitoes, scientifically known as *Culicidae*, have long been studied by scientists. However, the specific mosquitoes mentioned in the Quran have not been extensively studied from a scientific perspective. Several species of mosquitoes have been studied and found in the Middle East, but |

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| | identifying them specifically as those mentioned in the Quran remains speculative. Among the species studied by Mahyoub J.A. (2023) are *Diptera* located in laboratories in *Jeddah.* This study aims to develop bioinsecticide resistance against these vectors. Natural resistance generated by the soil, such as *Spinosad* and *Bacillus thuringiensis*, is toxic to mosquitoes, although some adult mosquitoes can withstand these natural toxins.<br><br>Additionally, *Anopheles Stephensi mosquitoes* are found in the Middle East and Africa. These mosquitoes are vectors responsible for carrying *Plasmodium falciparum* and *Plasmodium vivax,* causing *malaria*. The proliferation of these mosquitoes poses an increased threat of *malaria* in the Middle East and Africa (Samira M, 2023). Mosquitoes are notorious as vectors carrying various diseases. Among the mosquito vector species are *Aedes aegypti, Aedes albopictus, Aedes scapularis, Anopheles baimaii, Anopheles maculipennis, Culex fuscocephala, Culex quinquefasciatus,* and *Psorophora columbiae* (Perin, 2022). Diseases commonly associated with mosquito-borne illnesses in the Middle East and countries there include *Chikungunya* in Yemen and Sudan, *Dengue fever* in Oman and Saudi Arabia, *Malaria* in Yemen, Oman, and Saudi Arabia, *West Nile virus* in Egypt, *Zika virus* in Egypt, *Rift Valley fever* in Egypt, Saudi Arabia, and Yemen. *Aedes aegypti mosquitoes* transmit *Chikungunya, Zika,* and *Dengue fever. Malaria*, on the other hand, is transmitted by *Anopheles mosquitoes*. *Culex pipiens* carries *West Nile virus*, while *An. Mcintoshi* transmits *Rift Valley fever* (Laith, 2024). |

## Grasshopper

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| Ibn Umar al-Zamakhshari | In Surah *al-A'raf*, these locusts appeared after rain and consumed all their crops, fruits, doors, roofs of houses, and clothes. They encountered Moses (peace be upon him) and were commanded to repent. Upon their repentance, the grasshopper departed.<br><br>In Surah *al-Qamar*, these grasshoppers are described as coming in large numbers. It is said that they resemble an army gathering closely together. |
| Ibn Jarir al-Ṭabari | He does not provide a detailed interpretation. However, in Surah al-Qamar, these locusts are likened to emerging from the graves and heading towards the Day of Judgment. |
| Modern Research | *Orthoptera* is the scientific term for the family encompassing all types of grasshoppers and locusts (Heller, 2016). It is a species that has existed since about 290 million years ago and is classified into the suborder *Caelifera,* making it a fascinating insect for study due to its complex *phylogeny* and *genome* (Gaugel, 2023). The grasshopper |

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| | family is generally divided into two types: *Caelifera* (short-horned) and *Ensifera* (long-horned) (Bozdar, 2023).<br><br>Studies on grasshopper damage to crops are well-known and correlate with events described in the Quran. *The Acrididae* species is a family within *Caelifera* that has been extensively studied for its damaging impact on crops, grasslands, and pastures (Meena P., 2022). Research on grasshopper infestations in the Middle East began before 1962 and paused briefly after that year. It resumed around 2000 due to significant outbreaks affecting crops. Species commonly associated with crop damage *include S. gregaria, D. maroccanus, Calliptamus italicus (Linnaeus), Gryllus campestris Linnaeus, Platycleis intermedia (Serville), Platycleis affinis Fieber*, and *H. pterosthica*. This phenomenon is exacerbated by indirect effects of global warming, leading to increased generations of grasshoppers, range shifts over several generations, and greater invasiveness (Çiplak, B. 2021). Most researchers focus on behavioral patterns and specific species of grasshoppers in their modern studies. |

## Lice

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| Ibn Umar al-Zamakhshari | The verse that talks about lice follows the verse about grasshopper. It is narrated that after the grasshopper departed, the Children of Israel returned to their religion. Then lice were sent upon them, also referred to as "الحمنان", "كبار القردان", "الدبا", "البراغيث", and they ate what was left behind by the grasshoper. It is said that these lice emerged from the sand heaps around when Moses (peace be upon him) struck his staff. They cried out in panic to Moses, accusing him of being a sorcerer, and declared they would never believe in him. |
| Ibn Jarir al-Ṭabari | Scholars of interpretation differ in opinion. Some say they were lice that emerged from wheat, some say they were small wingless locusts called "الدبى", some say they were lice from animals, and some say they were from swine lice. |
| Modern Research | The lice in the Quran are depicted as a type of creature that Allah sent down to destroy the leftovers that the grasshopper left behind. The term "lice" is ingrained in academic studies and human life. Among the lice that often live with humans is the Pulex irritans flea, which is a species of Siphonaptera. It has a flattened body, a thick shield measuring between 1-4 millimeters, and lives on the skin of animals or humans. These fleas seek shelter close to the skin to avoid sunlight, often finding refuge in hair or fur. Physically, they have hind legs adapted for jumping up to 1 meter and a body that can expand up to 20 times their own weight when feeding on blood. They are also known to transmit diseases such as flea allergy dermatitis (FAD) due to their saliva. Furthermore, |

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| | other fleas can carry diseases such as Ctenocephalides canis, which spreads tapeworms. Human fleas can also transmit diseases such as typhoid (Salmonella typhi), tularemia (Francisella tularensis), and Staphylococcus aureus infections. The large number of bites can lead to anemia, especially in children, as most flea species can lay approximately 600 to 2000 eggs throughout their lives (Kluj, 2024).<br><br>Apart from blood-sucking fleas, there are also plant-eating fleas that damage crops. One such flea is Psylliodes Chysocephala, which feeds on rapeseed plants, an oil-producing plant, including cotyledons and young leaves. This flea is commonly found in Europe, measuring between 3.2-4.6 mm in length, with robust hind legs for jumping, and comes in various colors such as black, brown, and metallic blue. It is capable of flying distances of 3-4 km (Ortega, 2022 & Claire, 2023). |

## Bee

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| Ibn Umar al-Zamakhshari | Allah commanded the bee to make mountains, trees, and human dwellings as their homes. |
| Ibn Jarir al-Ṭabari | Allah informed Muhammad S.A.W. that inspiration was given to the bee to construct their homes and build their structures. |
| Modern Research | Worker bees have an acute sense of taste. Each hair functions as an *olfactory organ*, and it is estimated that each bee has between 15,000 to 500,000 hairs. The bee's sense of smell is so sharp that it can detect scents using a ratio of 1:1500. In a hive, a colony consists of one queen, drones, and 1,000 to 100,000 worker bees. To collect 1 kg of honey, bees will visit 10,000 flowers and make 120 to 150 trips back to the hive. They can forage over a distance of 65 km within an hour. Bees will not collect nectar from flowers with a sugar concentration below 4.25%. Bees can carry nectar equivalent to 10% of their body weight and will carry pollen on their hind legs to balance the nectar. It is estimated that a bee colony can collect up to 150 kg of honey throughout the summer. The queen bee lives for 5 to 8 years, drone bees live only 3 months during summer, and worker bees live only 21 days. It is estimated that a bee colony requires 10 to 15 km of territory, with each bee needing only 200 meters (Yusupovna, 2023).<br><br>Another remarkable ability of bees is their construction of hexagonal prism hives. This architectural feat is highly inspiring to engineers because it is very precisely arranged with equal angles, encompassing the largest volume while using the least material. Moreover, bees produce healthy honey containing various substances such as *phosphates,* |

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| | *calcium, iron, magnesium, potassium, sodium chloride, sugars, enzymes, proteins, vitamins*, and other components. Honey also contains *Vitamins B13, B14,* and *BT*. Due to these components, honey is effective in treating several ailments such as nervous system disorders, coronary diseases, chronic bronchitis, gastritis, anemia, wound healing, allergic reactions, weight deficiency, duodenal ulcers, old epidermal diseases, and other chronic conditions (Tanzeel, 2023). |

## Fly

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| Ibn Umar al-Zamakhshari | Allah gave the example of a fly to the *Quraysh*, illustrating that it would be impossible for them, despite gathering all their worshipped beings to help their god, to ward off a fly. This is an example of the ignorance and weakness of the *Quraysh*, similar to the weakness of a fly. |
| Ibn Jarir al-Ṭabari | The meaning of "*ḍaraba*" here signifies making or appointing. If all the beings worshipped on earth were gathered and given charge over a fly, they would not be able to shoo it away. Even if they tried with the combined effort of fragrant oils, the fly would still come. |
| Modern Research | Flies are small insects on this earth. They can be used in investigating death cases. They have long been used in data collection in Arab countries such as Saudi Arabia, Kuwait, Iran, and the United Arab Emirates. One of the benefits of collecting data from the deceased is determining the time of death using PMI (Post-Mortem Interval). However, this method is sometimes not used and is opposed because adult flies sometimes do not lay their eggs on the corpse and come from other directions. However, it can be used if several analyses are considered, such as ensuring the weather is favorable for insect activity and there are no barriers preventing flies from landing on the corpse.<br><br>The species of flies commonly found on corpses include *Chrysomya albiceps (Wiedemann) (Calliphoridae), Sarcophaga (=Liosarcophaga) dux Thompson, S. (=Parasarcophaga) ruficornis Fabricius, Wohlfahrtia nuba (Wiedemann), W. indigens Villeneuve (Sarcophagidae),* and *Musca domestica Linnaeus (Muscidae).* However, among all these species, only a few are very effective and can be used to determine the time of death, specifically the species *S. dux and W. nuba*. Insects of the *Sarcophagidae* species are also found to be the earliest and can be used in studies to determine the time of death of the deceased (Wells, 2021). |

## Ant

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| Ibn Umar al-Zamakhshari | The origin of the word "ant" (*al-namlu*) in terms of pronunciation is similar to "man" (al-rajulu). There was an ant that was stepped on, and it cried out to its colony to enter their dwelling, then Prophet Solomon heard and diverted slightly their path. |
| Ibn Jarir al-Ṭabari | The ants said to their colony to enter their homes so they would not be stepped on because Prophet Solomon's army would not notice them. |
| Modern Research | Many know that someone who studies or researches ants is called an ant researcher. However, it is also called *Myrmecology*. It is a branch of entomology. Ants are also insects from the order *Hymenoptera*, like bees, and have more than 12,000 species (Ester, 2022). Ants' diets typically include plants or sweet foods, depending on the species. In agriculture, ants can be categorized into two main groups: decomposers and predators. This aligns with a study by Tamrin A. et al. (2023), who researched bell pepper plants and found four ant species. Of these four species, they can be divided into two main functional groups regarding their impact on bell peppers. The decomposer group includes *Monomorium Sp*. and *Pheidola Sp*. It is said that the species *Cardiocondyla obscurior* dominates globally across continents compared to other ants. This is due to the higher *Cuticular Hydrocarbon* profile in this species, which serves as a signal for these ants to protect their colonies from external threats and the colonial power of other ants trying to penetrate this species, allowing them to invade other species more aggressively (Drakula, 2023). Possibly, what is mentioned in the Quran refers to this majority species. However, there is also a discussion about ants that often live in deserts. A study by Lecoq et al. (2021) found that among the ants living in arid and desert areas are *Cataglyphis viatical* and *C. cubica*. Both have a similar range in central Morocco but differ dramatically in the polymorphism levels among worker ants. CC workers are said to be smaller on average compared to CV. In the ant family, *Cataglyphis* withstand higher temperatures alongside *Melophorus* and *Ocymyrmex* ants. Other ants, like *Formica* and *Myrmica*, tend to explore finding convergent and specific adaptation places rather than enduring the heat. This means thermophilic ants show higher heat resistance and can survive in deserts (Araujo, 2023). The ants mentioned in the Quran could be one of these species or perhaps not. However, ants can communicate with each other through chemical sprays and mechanical movements. Further practical and field studies are needed to identify the ants mentioned in the Quran, but the Quran has shown how ants communicate for safety purposes (Md Shahjahan, 2023). |

## Termite

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| Ibn Umar al-Zamakhshari | It is called "*duwaybah*" (small creature) and referred to as "*al-Sirqah*" (thief). "*Minsa'ah*" (cane) is called so because in its meaning it signifies passing through by showing evidence (of death) and the weakness of the jinn. |
| Ibn Jarir al-Ṭabari | The "*Dābatul 'arḍ*" (creature of the earth) is also referred to as "'*arḍah*" (ant) that ate Prophet Solomon's cane to indicate its death. |
| Modern Research | Termites usually build mounds and are considered the largest colonial animals that construct structures also deemed large (Fagundes, 2021). They are often regarded as unintelligent animals without memory. However, termites actually possess memory capabilities derived from practical implications they encounter to ensure their survival. Learning from life implications also occurs in other insects like flies, wasps, ants, and bees (Ding, 2024). Additionally, termites are fascinating insects because they can produce methane gas, with the amount generated depending on the land use, climate, and plant productivity (Ito, 2023). Termite research does not stop there; studies on the ability of termites to consume wood are also conducted. This is somewhat related to how termites could eat Prophet Solomon's staff in the Quran. Termites are indeed insects capable of breaking down wood into smaller elements. Termite species like *Nasutitermes* are efficient in decomposing materials into primary units and *methoxyl* by separating soluble and solid substances from the wood. In contrast, the *woodroach* species *Cryptocercus darwini* has limited decomposition abilities when consuming wood, leaving behind fine powder called *polysaccharides*. This disrupts the integrity of the wood by disturbing the bonds between *lignin, polysaccharides,* and *intramolecular* structures, leaving some parts intact (Hong Jie, 2023). |

## Moth

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| Ibn Umar al-Zamakhshari | It is likened to a moth because of its life living in groups, scattered, weak, and insignificant, then fluttering towards anything that calls it like fluttering towards a lamp. It is called "*farāshah*" due to its nature of spreading out (*tafrish)* and dispersing *('Intishar)*. |
| Ibn Jarir al-Ṭabari | On the Day of Judgment, humans will be like moth falling into the fire in the manner of "*al-mabthūth*," which is interpreted as being scattered apart *(al-mufarraq)*. |
| Modern Research | Moths are a type of insect with wings, resembling butterfly. These insects typically use olfactory glands to select habitats, find mates through the secretion of pheromones by |

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| | females, recognize their own species, and avoid predators. This behaviour is also observed in moths and cockroaches. Among the moth that release pheromones is *Chloridea virescens*. *CV* usually secretes pheromone hormones that *contain de novo biosynthesized alcohols, aldehydes, acetates*, and *carboxylic acids*, similar to the pheromones secreted by females (Liu, 2023). Additionally, butterflies are insects attracted to ultraviolet light. They are drawn to shortwave radiation even in small quantities, such as from metal halide lamps and mercury vapor lamps. Moreover, other colours of light, like blue, which have weak light emission, are also favoured by moth (Brehm G., 2021 & Jägerbrand, A., 2023). |

# Discussion

## Mosquito

Through the findings of research, mosquitoes are found to be weak creatures because they do not provide any benefit and have a short life cycle. The lifespan of adult mosquitoes typically ranges from as short as 4 days for some species to up to a month (Mohd Sukki, 2012). On the other hand, mosquitoes also bring significant harm to humans by transmitting various diseases such as dengue (Jonathan, 2012). However, the goodness brought by mosquitoes cannot be denied, as their presence serves as an indicator of stagnant and dirty water sources (Harun Yahya, 2014).

Upon examining these research findings, it is found that Ibn Umar al-Zamakhshari in his interpretation made statements about syntactic knowledge such as word derivation and why the word is in general form. When viewed from a rhetorical standpoint, the use of a generic word serves several purposes, including grandeur, generality, fear and surprise, majority, and minority, specific and general, mockery and ridicule. In this verse, the word is intended to denote generality and encompasses all types of mosquitoes derived from that noun, besides being used to mock the Mushrikīn (Muhammad Nur, 2023).

## Grasshopper

There is a difference in interpretation between Ibn Umar al-Zamakhshari and Ibn Jarir al-Ṭabari. Ibn Umar al-Zamakhshari states that they appear after rain, while Ibn Jarir al-Ṭabari does not specify how the grasshopper appear but only compares them to emerging from graves.

However, the locust described here uses "ال" in its name to indicate something specific. In Arabic, the purpose of including the letters Alif and Lam serves several purposes such as emphasizing, informing about known matters, indicating ongoing events, and categorizing all individuals or types into the same group (Abudzar, 2022). However, the locust described here is not clearly defined. According to this interpretation, the grasshopper that appear will consume everything like plants, houses, and clothes. Typically, grasshopper are classified as herbivorous animals (Siddiqui S.A., 2023).

## Lice

In the interpretation of lice, Ibn Umar al-Zamakhshari and Ibn Jarir al-Ṭabari differ in their views regarding the origin of these lice. Ibn Umar al-Zamakhshari states that they originate from the sand dunes surrounding them, while Ibn Jarir al-Ṭabari interprets that they originate from their own wheat stores. However, neither of them specifies the type of lice attacking the polytheists, as the diet of lice depends on the species. For instance, the Bemisia Tabaci Gennadius lice feed on vegetables (Ahsol, 2016), whereas the Pediculus Humanus Capitis lice are carnivorous and survive by feeding on human blood (Meilda, 2018).

## Bee

Both two scholars interpretations convey similar meanings in the Bee. Honey bees in Asia are mostly of the species Apis Cerana and Apis Mallefera. The choice of habitat for bees is influenced by several factors including cultural practices. Some bees settle permanently while others are migratory. Factors influencing habitat selection include open spaces with abundant flowers, temperatures ranging from 26 to 34°C, humidity levels of 70-80%, clean water, and avoidance of disturbances such as smoke, noise, odors, and wind (Joice J., 2023).

## Ant

Ibn Umar al-Zamakhshari provides a slightly more detailed explanation compared to Ibn Jarir al-Ṭabari by stating that Prophet Solomon heard their conversation and took action to divert his army. Prophet Solomon was bestowed by Allah with the miracle of understanding the languages of animals, plants, and the jinn. Therefore, it is not surprising that Prophet Solomon could hear what the ants were complaining about at that time. It is also narrated that the one giving instructions to the ant army was the queen ant. There is a narration suggesting that the size of ants during the time of Prophet Solomon was as large as a mongoose, but this opinion is rejected by al-Qurtubi, who states that the size of ants at that time was normal and such stories belong to Isrāʾīliyyāt (Asmadi, 2018).

## Termite

Ibn Umar al-Zamakhshari mentions termite as duwaibah, derived from the word Ism taṣghir (a derivative indicating something small), thus implying a small creature that could refer to any animal with a small body size. Meanwhile, Ibn Jarir al-Ṭabari specifically identifies termite as ʻarḍah (termite). The diet of ants consists mainly of plant tissues, especially wood, and sometimes they consume lichens, algae, and dry leaves. Ant infestations typically occur where there are wounds or decay, providing strategic locations for ants (Ong S.P., 2016). Prophet Solomon's staff was attacked by ants because it was made of wood, which may have had decay attracting the ants to start consuming it.

### Moth

Ibn Umar al-Zamakhshari discusses the linguistic-historical aspect of the moth, explaining why it is called farāshah (scattered). The justification for choosing Farāshah is seen in the scattered nature of moth, and it is depicted that humans will become like them on Judgment Day. Meanwhile, Ibn Jarir al-Ṭabari discusses the adjective after the moth, al-mabthūth, meaning scattered. This is described because on Judgment Day, people will think only of their own fate without caring for others. This is how humans are depicted to behave during Judgment Day.

## Conclusion

There is slightly difference between the interpretations of Ibn Umar al-Zamakhshari and Ibn Jarir al-Ṭabari regarding insects in the Quran. However, each has slight differences in their views on insects based on linguistic, historical, pragmatic, and semantic differences. All the insects mentioned in the Quran have wisdom from both religious and scientific perspectives. This explains that Islam is a religion that develops in parallel with scientific knowledge. However, deeper studies on insects can be conducted by future researchers, such as paleontological studies on insects in the Quran, to further explore the species of insects mentioned.

## References

1. Abudzar. 2022. Nakirah dan Ma‘rifah fī al-Qur’ān. *Jurnal Shaut al-‘Arabiyah*, 10(1).
2. Ahmad Syukran B.; Wan Abdul Fattah; Lukman A.; Muhammad Hazim; Mohd Adi; Faszly R.; Mohammad Amir W.; Muhammad Sobri F. 2021. Analisis Sistematik Tema Berkaitan Serangga Dalam al-Quran dan Hadis Sebagai Sandaran Pembuktian Dalam Kehidupan Manusia. *The Malaysian Journal of Islamic Sciences*, 33(2).
3. Ahsol, H.; Wiwin, S.; Liferdi, L. 2016. Kutu Kebul *Bemisia tabaci* Gennadius (Hemiptera: Aleyrodidae) Penyebar Penyakit Virus Mosaik Kuning pada Tanaman Terung. *Iptek Hortikultura*.
4. Ainl Yaqin; Mohammad Zaini. 2019. Penggunaan Serangga (al-Hasharat) Dalam Produk Kosmetik Menurut Perspektif Maslahah. *BITARA International Journal of Civilization Studies and Human Sciences*, 2(3).
5. Araujo, N.D.S.; Perez, R.; Willot, Q.; Defrance, M.; Aron, S. 2023. Facing Lethal Temperatures: Heat-Shock Response in Desert and Temperate Ants. *Ecology and Evolution*, 13(9): e10438.
6. Asmadi, A. 2018. Isrā’īliyyāt Dalam Periwayatan Kisah Nabi Sulaiman a.s. Melalui Kitab Jāmi‘ al-Bayān ‘an Ta’wīl Āyi al-Qur’ān. Tesis Doktor Falsafah. Universiti Pendidikan Sultan Idris.
7. Bashar, M.; ‘Isam, F. 1994. Tafsīr Ibn Jarīr al-Ṭabarī Min Kitābihi Jāmi‘ al-Bayān ‘an Ta’wīl Āyi al-Qur’ān. Beirut: Mu’assasah al-Risālah.
8. Bozdar, M.I.; Sultana, R.; Soomro, F.; Babar, A.A. 2023. Exploring the Diversity of Acridomorpha in Mehrano Forest from Khairpur Mirs. *Journal of Wildlife and Biodiversity*, 7(Special Issue): 507–525.

https://doi.org/10.5281/zenodo.10266518
9. Brehm, G.; Niermann, J.; Jaimes Nino, L.M.; Enseling, D.; Jüstel, T.; Axmacher, J.C.; Fiedler, K. 2021. Moths Are Strongly Attracted to Ultraviolet and Blue Radiation. *Insect Conservation and Diversity*, 14(2): 188–198.
10. Çiplak, B. 2021. Locust and Grasshopper Outbreaks in the Near East: Review Under Global Warming Context. *Agronomy*, 11(1): 111.
11. Ding, Y.E.; Li, Z. 2024. Termites Can Learn. *Behavioural Processes*, 217: 105012.
12. Drakula, M.; Buellesbach, J.; Schrader, L. 2023. *Myrmecological News*.
13. Ester, N. 2022. Studi Etologi Semut Rangrang (Oecophylla smaragdina) pada Kondisi Habitat yang Berbeda. *FAGURU: Jurnal Ilmiah Mahasiswa Keguruan*, 1(2): 95–107.
14. Fagundes, T.M.; Ordonez, J.C.; Yaghoobian, N. 2021. The Role of Mound Functions and Local Environment in the Diversity of Termite Mound Structures. *Journal of Theoretical Biology*, 527: 110823. https://doi.org/10.1016/j.jtbi.2021.110823
15. Gaugel, S.M.; Hawlitschek, O.; Dey, L.S.; Husemann, M. 2023. Evolution of Mitogenomic Gene Order in Orthoptera. *Insect Molecular Biology*, 32(4): 387–399.
16. Harun Yahya. 2014. Keajaiban Nyamuk Dalam Ensiklopedia Mu'jizat Ilmiah al-Qur'ān. Bandung: PT Sigma Examedia Arkanleema.
17. Heller, K.G.; Bohn, H.; Haas, F.; Willemse, F.; de Jong, Y. 2016. Fauna Europaea – Orthopteroid Orders. *Biodiversity Data Journal*, 4.
18. Hongjie Li; Xue Kang; Mengyi Yang; Boris D.; Xuguo Zhou; Shiyou Liang; Xiaojie Zhang; Jia-Long Wen; Baoting Yu; Ning Liu; Yufen Zhao; Jianchu Mo; Cameron R. Currie; John Ralph; Daniel J. Yelle. 2023. Molecular Insights Into the Evolution of Woody Plant Decay in the Gut of Termites. *Science Advances*, 9(21): eadg1258.
19. Huang, R.; Tlili, A.; Zhang, X.; Sun, T.; Wang, J.; Sharma, R.C.; Affouneh, S.; Salha, S.; Altinay, F.; Altinay, Z.; et al. 2022. A Comprehensive Framework for Comparing Textbooks: Insights from the Literature and Experts. *Sustainability*, 14: 6940. https://doi.org/10.3390/su14116940
20. Ikhwan, Z. 2004. Kajian Perbandingan Kadar Pereputan dan Urutan Ekologi Serangga bagi Bangkai Haiwan Terdedah yang Berbeza Saiz dan Spesies. Tesis Sarjana. Universiti Putra Malaysia.
21. Ito, A. 2023. Global Termite Methane Emissions Have Been Affected by Climate and Land-Use Changes. *Scientific Reports*, 13(1): 17195.
22. Jägerbrand, A.; Andersson, P.; Nilsson Tengelin, M. 2023. Dose–Effects in Behavioural Responses of Moths to Light in a Controlled Lab Experiment. *Scientific Reports*, 13(1): 10339.
23. J. Syari; R. Muhammad; K. Norman; A.B. Idris. 2011. Pemeliharaan *Sycanus dichotomus* Stål. (Hemiptera: Reduviidae) Serangga Pemangsa Ulat Bungkus Tanaman Sawit *Metisa plana* (Lepidoptera: Psychidae) Walker di Makmal. *Sains Malaysiana*, 40(10): 1129–1137.

24. Joice, J.; Hengki, J.; Martha, M.; Merry, D. 2023. Mengenal Madu Lebah (Apis Spesies). Yayasan Bina Lantera Insan.
25. Jonathan, C.; Javier, M.; Soila, S.; Michael, S.; Rebeca, R. 2012. Mosquito Bite Delivery of Dengue Virus Enhances Immunogenicity and Pathogenesis in Humanized Mice. *Journal of Virology*, 7637–7649.
26. Kluj, A.; Kosiada, M.; Mularczyk, P.; Robakowski, F.; Spławski, J.; Tylkowska, K.; Hadaś, E. 2023. The Use of Phytotherapy in the Fight Against Parasitic Diseases. *Annals of Parasitology*, 69(3–4): 91–102.
27. Laith, A.E.; Alnimri, M.; Ali, H.; Alkhawaldeh, M.; Mihyar, A. 2024. Mosquito-Borne Diseases: Assessing Risk and Strategies to Control Their Spread in the Middle East. *Journal of Biosafety and Biosecurity*.
28. Lecocq de Pletincx, N.; Dellicour, S.; Aron, S. 2021. The Evolution of Ant Worker Polymorphism Correlates with Multiple Social Traits. *Behavioral Ecology and Sociobiology*, 75: 113. https://doi.org/10.1007/s00265-021-03049-6
29. Liu, Y.; Heath, J.J.; Zhang, S.; van Wijk, M.; Wang, G.; Buellesbach, J.; Schal, C. 2023. A Mosaic of Endogenous and Plant-Derived Courtship Signals in Moths. *Current Biology*, 33(16): 3529–3535.
30. Mahmud, A. 2009. Tafsir al-Kashāf 'an Ḥaqā'iq al-Tanzīl wa 'Uyūn al-Aqāwīl fī Wujūh al-Ta'wīl. Beirut: Dār al-Ma'rifah.
31. Mahyoub, J.A.; Algamdi, A.G.; Aljameeli, M.M. 2023. Resistance Development to Bioinsecticides in *Aedes aegypti* (Culicidae: Diptera), the Vector of Dengue Fever in Saudi Arabia. *Saudi Journal of Biological Sciences*, 30(9): 103776.
32. Md Shahjahan Kabir; Md Ruhul Abedin Wara. 2023. Harmony of Science and Scripture: Exploring Quranic Insights for Sustainability. *Journal of Fareast International University*, 6(1): 14–22.
33. Meena, P.; Prajapat, R.; Kumawat, N.; Kumari, V.; Meena, S. 2022. Acridid (Orthoptera: Acrididae) Diversity and Distribution in the Eastern Plain of Rajasthan, India. (Maklumat jurnal tidak lengkap).
34. Meilda, H. 2018. Kutu Rambut Kepala (*Pediculus humanus capitis*). Banjarbaru: Yayasan Borneo Lestari, Akademi Analisis Kesehatan Borneo Lestari.
35. Mohd Sukki; M.Y. Zulkifli. 2012. Perumpamaan Serangga Dalam al-Qur'ān: Analisis I'jaz. *International Journal on Quranic Research*, 2(1).
36. Muhammad Hazim; Ahmad Syukran; Naji A.; Hasnizam H.; Hendun A.; Wan Abdul F.; Lukman A. 2020. Penggunaan Serangga Sebagai Keterangan Dalam Perundangan Jenayah Islam. *Serangga*, 25(1): 68–83.
37. Muhammad Nur. 2023. Penggunaan Kata Nama Am Dalam al-Qur'an al-Karim: Kajian Analisis Sintaksis. *Asian Journal of Civilizational Studies (AJOCS)*.
38. Muhammad Rizqi. 2021. Serangga Dalam al-Quran Dari Perspektif Tafsir Ilmi. Jakarta: Institut Perguruan Tinggi Ilmu al-Quran.
39. Noor Farikhah, H.; Cecep Kusmana; Siti Mayang, S. 2023. Keanekaragaman Jenis Serangga Pada Berbagai Umur Tegakan *Rhizophora mucronata* yang Ditanam dengan Teknik Guludan di Muara Angke, Jakarta. *Jurnal Silvikultur Tropika*, 14(1): 70–79.
40. Ong, S.P.; Nur Zati, A.M. 2016. Anai-Anai Perosak. Kuala Lumpur: Institut Penyelidikan Perhutanan Malaysia (FRIM).

41. Ortega-Ramos, P.A.; Coston, D.J.; Seimandi-Corda, G.; Mauchline, A.L.; Cook, S.M. 2022. Integrated Pest Management Strategies for Cabbage Stem Flea Beetle (*Psylliodes chrysocephala*) in Oilseed Rape. *GCB Bioenergy*, 14(3): 267–286.
42. Perrin, A.; Glaizot, O.; Christe, P. 2022. Worldwide Impacts of Landscape Anthropization on Mosquito Abundance and Diversity: A Meta-Analysis. *Global Change Biology*, 28(23): 6857–6871.
43. Price, C. S. V., Campbell, H., & Pope, T. W. 2024. Assessing the potential of biopesticides to control the cabbage stem flea beetle *Psylliodes chrysocephala*. *Pest Management Science*, 80(5): 2471–2479.
44. Rabihah I., Azman S., & Nurul Wahida O. 2022. Kepelbagaian dan taburan serangga ranting pada altitud berbeza di Gunung Jerai, Kedah, Malaysia. *Serangga*, 27(3): 204–219.
45. Salman, Lalu Muhammad Ukhrowi, & Muhammad Azim. 2020. Budibudaya maggot lalat Black Soldier Flies (BSF) sebagai pakan ternak. *Jurnal Gema Ngabdi*, 1(3): 7–11.
46. Samira M., Irish, S. R., Carter, T. E., Lenhart, A., Aljasari, A., Montoya, L. F., & Hutin, Y. J. 2023. Public health impact of the spread of *Anopheles stephensi* in the WHO Eastern Mediterranean Region countries in Horn of Africa and Yemen: Need for integrated vector surveillance and control. *Malaria Journal*, 22(1): 187.
47. Siddiqui, S. A., Ghisletta, M., Yunusa, B. M., Jiddum, F. A., Sarawsawti, Fernando I., Nagdalian, A. A., Gvozdenko, A. A., Mohd, A. S., Lorenzo, J. M., & Dar, B. N. 2023. Grasshoppers and locusts as human foods – a comprehension review. *Journal of Insects as Food and Feed*.
48. Tamrin A., Melina, Prihatin, Nurul W., & A. Dian R. M. 2023. The effect of artificial feeding treatments on predatory and pollinating ants in cayenne pepper plants. *Jurnal Biologi Tropis*, 23(4): 98–105.
49. Tanzeel Kausar, & Ghulam Dastgir Shaheen. 2023. Dr. Haluk Nurbaki: His biographical sketch and contribution to biological sciences with reference to some Qur'ānic verses. *Al-Kashaf*, 3(1): 1–12.
50. Tribuana S. 2007. Perbandingan populasi larva Odonata di beberapa sungai di Pulau Pinang dan hubungannya dengan pengaruh habitat dan kualiti air. Universiti Sains Malaysia.
51. Tumin, Firman M., & Halim P. 2020. The concept of wasatiyyah in the views of Ibn Umar al-Zamakhshari and Fakhr al-Dīn al-Rāzī. *ISTAWA: Jurnal Pendidikan Islam (IJPI)*.
52. Wells, J. D., MacInnis, A. E., Dsouza, M. A., Abdin, Z. U., Al Mughawi, S., Al Khloofi, M., & Al Mheiri, R. 2021. Forensic entomology when the evidence is "no insect": Best carrion fly species for predicting maximum postmortem interval in the United Arab Emirates. *Forensic Science International*, 328: 110999.
53. Yusupovna, S. K. 2023. Huge role of bees in the biosphere: Philosophical analyze. *Mediterranean Journal of Basic and Applied Sciences (MJBAS)*, 7(2): 68–74.