

THE BRAVE ANT

Dr. Shamsul Islam Farooqi (Alig.)

Foreword

In the world of children's literature, the name of Dr. S.I. Farooqi is well known as an entomologist. He has a good command in narrating insects life as a story or in written form for children. A dozen of his books have already been published and popularized by various publishers. In recognition of his work and scientific contribution he has received several awards as well. The production of objective oriented children's literature in Urdu language is a great need of the time. Very few organizations have shown concern about it. Dr. Farooqi is an active member of this struggle. Five of his books have already been published by the Markazi Maktaba Islami Publishers.

In this book, entitled "The Brave Ant" he has presented the story of an ant from birth to death in an interesting manner. This story depicts the details of an ant's life in the form of a narration by children. Through questions raised by children, he has presented various aspects of the ant's life in a natural and easy way.

The ant's life takes a start in a very interesting way. A child is bitten by an ant when he was blocking the passage of another ant. Details have been provided how, through its scent the ant called a soldier ant to defend itself and how it got released. Allah Tāla has

granted the power of conveying messages through scent. If food is found somewhere, then by releasing a particular scent an ant can call its fellow ants. Allah has created glands inside their bodies to release these scents called pheromones and keiromones.

Details of ant colonies are provided and distribution of labour amongst ants has been explained. Description of mother queen, working and soldier ants has been given and it has been told how some ants volunteer themselves to act as storage tanks for the plant sap and sacrifice their lives. Inside ant colonies, special rooms are provided for keeping eggs, larvae, and pupae and fungal gardens are grown. The Qur'anic verses in which the conversation between Prophet Sulaiman (A.S.) and the ants has also been mentioned in this book.

The author has presented the collective life of ants, their teamwork and existence of division of labour in an interesting way. This book is a pleasant gift for children and a source of valuable information for elders. The author deserves to be congratulated for his stupendous efforts. May Allah prove this book to be a source of creating awareness about the miracles of nature and serve to be thought provoking for its readers. May this also become a source of reward for the author (Āmeen).

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THE BRAVE ANT

Ali Ameen, Ali Abdullah and Abid were brothers. There was hardly one to two years of difference between their ages. Ali Ameen was the eldest, Ali Abdullah younger to him while Abid was the youngest. Ameen and Abid were extremely mischievous. All the time they would plan one mischief or the other. However Ali Abdullah was somewhat different from them. Usually he did not take part in the mischievous activities of his brothers. If his brothers' activities exceeded certain limits then he not only prevented them from doing so but even gave them sound advice.

Ali Sād was their cousin. As their houses were near to each other, most of the time they were found playing and doing all sorts of mischievous activities. When it came to mischief, Ali Saad was not far behind his cousin brothers. On most occasions the planning would be done by him. Teasing ants was their favourite activity. Whenever they found ants going in a line, they would remove some of them from their path. They were extremely surprised to see that they were unsteady for some time only but ultimately succeeded in searching their way along with other fellow ants. They wondered how those tiny creatures could do so. They were desirous to know the reason.

During the rainy season, the insect population increased immensely. Insects would always be found crawling or hopping inside and outside the house. Children were advised not to go out barefoot, lest they would be bitten by poisonous insects. If they came in contact with their skin, they could cause itching and even blisters. Out of all the children, only Ali Abdullah was obedient to his elders. Whenever

he would go out he would always put on his shoes while others were always seen barefoot.

One day it was cloudy and a pleasant breeze was also blowing. All the children were racing outside in the nearby field. Ameen and Sād were fast runners. At times Ameen would take the lead while on other occasions Sād would beat him. They were racing for quite some time when Sād suddenly inquired:

“Ameen, where has Abid disappeared? He has not been with us for quite some time.”

Both looked around. Abid was standing at a far off distance at the other end of the field. From a distance, it appeared as if he was making some observation on the ground. They shouted to call him back but he did not respond.

Ameen, Sād and Ali Abdullah decided to go and see what he was doing. On reaching up to Abid, they saw him taking his foot forward and then backward and then sideways. At the same time he was also murmuring something. When they reached very near to him, they heard him saying:

“Today you have to tell me how you walk in line with the others. If you don’t tell me I will not allow you to enter your house.”

Every body saw that Abid was blocking the passage of an ant with his leg and that was the reason for putting his foot forward, backward and sideways. Nearby there was a hole where the ant wanted to go. Abid was blocking its way and was not allowing it to enter its hole while constantly repeating his question. Seeing this, Ali Abdullah said:

“Abid, what is this nonsense?! Have you ever heard ants talking? Why you are insisting unnecessarily? How could it tell you the reason for its walking in line? Please do not block its way; come and play with us!”

Abid looked at his brothers. Recalling something he said:

“Don’t you remember last week’s Qur’anic lesson when Maulana Sahib was narrating the story of Prophet Sulaiman. (A.S.) When he and his army reached the valley of ants, one ant told the other ants to quickly enter their holes, lest Sulaiman(A.S.) and his army crush them. Hearing this, Prophet Sulaiman(A.S.) smiled and thanked God.¹ Please let me know, if Prophet Sulaiman(A.S.) could hear ants why can’t we?”

Hearing this Ameen said:

“What rubbish! Have you forgotten that Prophet Sulaiman (A.S.) was a Prophet of Allah. How you can compare yourself with him?”

While they were talking, a bigger and stronger ant suddenly came out of the same hole with its jaws wide open. It went straight to Abid and bit his toe. A drop of blood came out. The attack was so sudden and painful that Abid started to cry, tears pouring down his cheeks. Everybody got worried and looked at Abid’s foot. But no one dared to remove that dreadful ant from his toe. All helplessly stared at Abid. During this period, the ant whose passage was blocked by Abid got the opportunity and quickly entered its hole. Soon after, the bigger ant also left Abid’s toe and quickly disappeared in the same hole.

All this happened so quickly that no one had a chance to think. But after a while when Abid’s pain subsided, all of them realized that there was something extraordinary about this incident. It was true that the ant had not spoken to Abid but it had definitely called or sent a message to its companion for help. The bigger ant not only came out with its jaws wide open but straightaway went to Abid and attacked him. As soon as its fellow ant got relieved and entered the ant hole, that ant also left Abid’s toe and entered the same hole behind it and disappeared. Surely the whole event was not by chance; it was planned. Thinking about it with great amazement, the children returned home.

¹ Surah An-Naml: 18-19.

“We should bring this to the knowledge of Dada Abbu. He will surely tell us something about it.” suggested Ali Ameen.

Everybody agreed with him and started waiting for Dada Abbu.

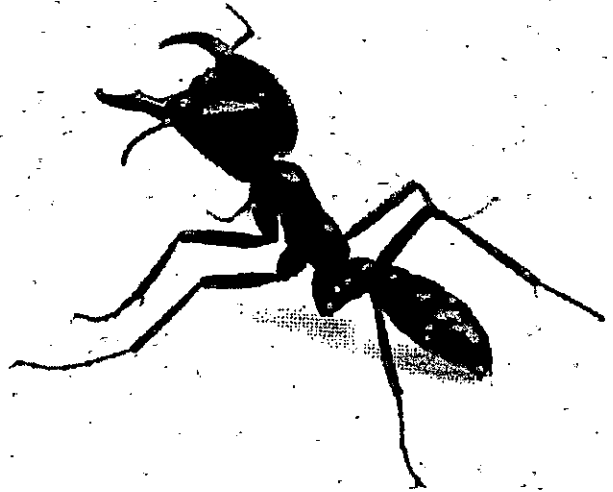
In the evening, when he came home, all the children gathered around him and narrated what had

happened that day. After listening to the details, Dada Abbu said:

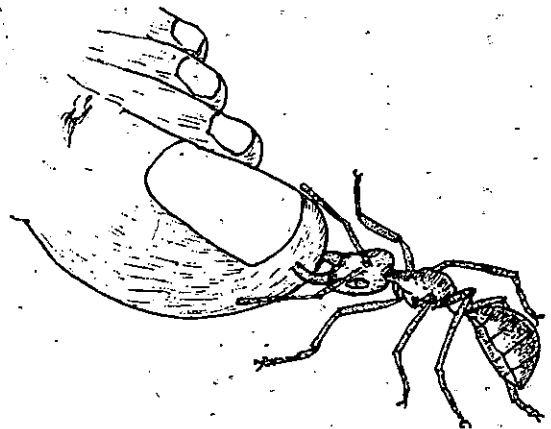
“Well, one thing you understand that the event of Qur’an mentioned by Maulana Sahib is absolutely true. Ants can very well talk with each other. However it is not necessary that they may talk as you talk amongst yourselves. So far as the ant which attacked Abid’s foot is concerned, it was a soldier ant of the colony which was surely called by the other ant for help.”

“But Dada Abbu, what could be ‘the other ways of talking’? We understand that talking can only be done as we talk among ourselves.” said Sād.

“If an ant wants to tell something to its fellow ants, it is not at all necessary for it to cry out



Soldier ant



Soldier biting on toe

like you but it may exhibit some signals which you do not understand.” explained Dada Abbu.

“How could such a little creature make a signal that becomes understandable to an ant sitting inside the ant hole?” Ali Abdullah asked surprisingly.

“Look, there could be several ways of signalling. Some signals could be exhibited by means of hands, feet or eyes. These would be understood by others looking at them but several signals could also be given by releasing certain scents. Others recognize the smell and understand what their fellow ant wants. Ants make use of such signals all the time.” Dada Abbu explained.

This information was very astonishing for the children. They had difficulty in believing that such tiny creatures could convey their messages by releasing different type of scents. They realized that the messages would be innumerable. If so, then how was it possible to utilize different scents for different messages? Pondering over this, Ameen inquired:

“Dada Abbu, it appears very strange that a little creature like an ant is able to release different scents. Wouldn't it be difficult to produce so many scents?”

“This is called the Divine Power of Allah. The more you think about it the firmer will be your faith about the Greatness of Allah. It is His Greatness which not only created a creature like an ant but imparted this extraordinary ability with which it not only produces different types of scents but utilizes it for the proper occasion. These ants have some special glands in their bodies which produce certain chemicals. Technically these chemicals are known as pheromones and keiromones. For example there is an eatable at some place. It is located by an ant. In order to convey this information to fellow ants, it uses a particular scent. The ants gather by smelling the same. Similarly an enemy's presence is also conveyed to soldier ants. Ants

indicate their passage through such a scent. An ant going ahead, goes on releasing certain keiromone which spreads in the form of a passage. Those following it detect the scent and walk along. Not only this but each following ant also produces the same scent so as to make a regular passage. Following the passage becomes easy for the other ants. This is the reason, ants always walk in a line and if they get disturbed, they find it with little effort.” Dada Abbu explained in detail.

“Wow, this is an extraordinary quality granted by Allah!” said Sād.

“Of course! And Allah granted the knowledge of this quality to His Prophet Sulaiman (A.S.) who not only understood what the ant said but also thanked Allah for granting this knowledge to him. One event referring to this quality of ants is very famous.” said Dada Abbu.

“What event?” everybody asked with great eagerness.

“There is a variety of Acacia called Bull Horn. The reason for this name is that this Acacia is characterized by very big thorns which look like horns of a bull. Ants make their nests inside these horn-like thorns. There are forests of bull horns in parts of Australia, Africa and America. In such a forest, there were innumerable



Bull Horn

colonies of ants. One day, a woodcutter happened to be there. As he started cutting the plant, one ant released a keiromone having a repulsive smell. Feeling that, other ants of the colony also released the same keiromone. Soon other colonies also joined them. The collective smell was so repulsive that the wood cutter could not bear it and ran away from the forest. This way the nature's gift proved to be a life saver for the ants."

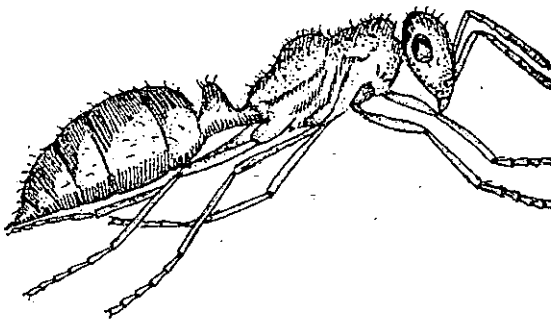
"Dada Abbu it is true that Allah has granted such excellent qualities to the little creatures with the help of which they are capable of saving themselves from their enemies. For us, they were always very amazing but you made them even more wonderful by sharing your knowledge." said Ameen.

"This creature of Allah is really very amusing and astonishing. Would you like to listen a story of an ant by which you would learn many more strange things about their lives?" Dada Abbu asked.

What could be more interesting than listening to a story! The children feeling very happy and leaned in closer to Dada Abbu with excitement.

Finding them attentive towards him, Dada Abbu began:

"In a dense forest, there was a huge muddy mount in which there was an ant colony. An ant called Myrmica used to live with its fellow ants in this colony. It was a winged ant. It was not the only winged ant in that colony but there were a large number of winged

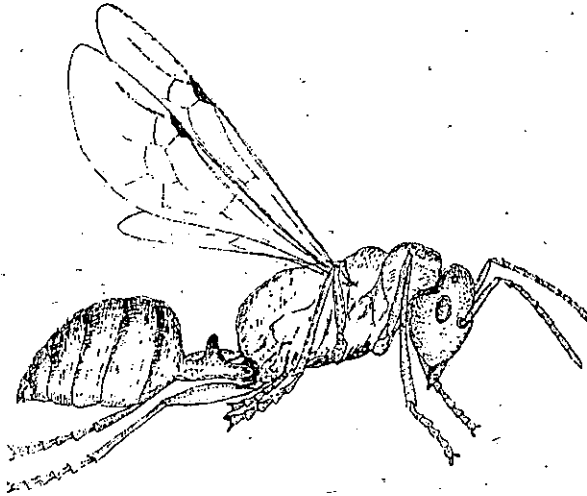


Wingless worker ant

ants similar to it. All ants of the colony wheather winged or wingless were known by the name Myrmica."

Not knowing about winged ants, Abid asked with surprise:

"Do ants possess



Winged worker ant

wings also?"

"Why not? In an ant's life a time comes when they develop wings. They have two pairs of transparent wings. As compared to hind wings, the forewings are larger."

Ali Abdullah who was listening very attentively to the story of ant said:

"Ants are surely very strange creatures but their names are stranger still. Don't you agree Myrmica is a peculiar unique name?"

"Not only ants, all living things have similar peculiar names. Names of animals and plants are derived from Latin or Greek words. Scientists framed certain international rules, which had to be in scientific languages. Even today, names of animals and plants are given by using words from these languages. Myrmica is such a name. Several other kinds of ants are known by names like Formica, Myrmecia, Dorylus and Camponotus." Dada Abbu explained and continued the story:

"I was telling you that Myrmica's colony included both male and female winged ants. In the colony, there were some ants of bigger size having pointed and sharp mandibles. These soldier ants were of the same type as the one which attacked Abid. The moment these soldiers get information about an enemy, they reach there to fight. In this colony in a very safe and protected room was the Mother Queen. She was respected and cared for by all ants. The ants would always obey her orders. Laying eggs was the only task done by Mother Queen so that new ants continued to be born, making the colony

bigger. Myrmica was living very happily and comfortably with its fellow ants when one day it suddenly received a message from the Mother Queen.”

“What message? Was there an ant that conveyed messages also in the colony?” Sād wanted to know.

“Message was not conveyed through an ant but it means that Myrmica perceived a scent from the Mother Queen which informed it and other winged ants and the message was:

‘All winged ants including males and females leave the colony and go outside.’”

Myrmica was shocked and worried. It immediately ran to the Mother Queen and said:

“Mother Queen, what wrong have we done? We have always obeyed every order of yours. It never happened even once that you ordered and we disobeyed. Where should we go after leaving the colony in this bad weather?”

Listening to this, the Mother Queen said:

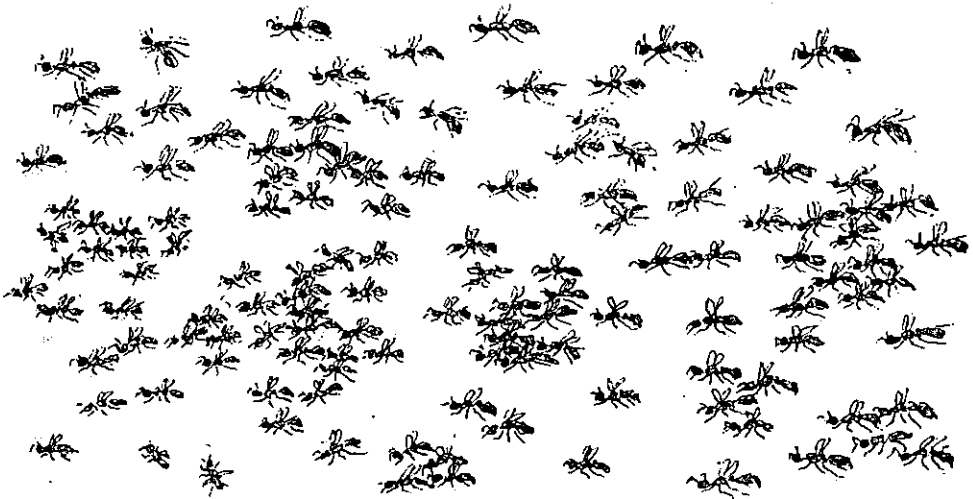
“Do not take it to be a punishment. You are all very obedient children. You never betrayed me and always obeyed my orders. As a matter of fact this is the need of the hour. You see yourself that the population of this colony has increased too much. There is very little room to live. The time has come that all the winged members should leave the colony and go out. Allah’s land is very vast. You should spread far and wide over this land and lay foundations of new colonies.”

“But Mother Queen, where should we go to after leaving and how do we make new colonies?” asked Myrmica.

“This will be told to you by the Lord who created you. However, I give you a piece of advice. Wherever you go neither get disappointed by the circumstances nor lose heart. Face all your problems with full courage and always try to solve them using your

brain. Allah has given you four graceful wings. With their help you can fly wherever you wish. The farther you go, the happier I will be. I wish my progeny to spread out far and wide. Listen to me, your sisters have kept well chewed and thinned food in small sacks beneath your mouth. Alongwith this several fungal filaments have also been kept for your help. Besides that, a lot of fat is present within your bodies. You can make use of this too if the need arises. However by that time you will, Inshallah, be capable of managing your problems. You all may leave now. May Allah take care of all of you.”

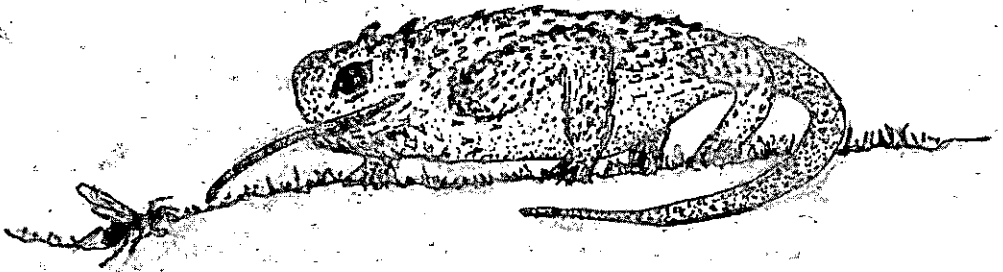
“After listening this, Myrmica and all other winged ants kissed their Mother Queen, said goodbye and started leaving the colony. Outside the world was very magnificent. They started flying happily. Flying in the open sky was very pleasant. Inside the colony they had no idea about their number but after coming out they realized they were in huge numbers. They saw winged male and female ants were not only coming out from their colony but from several other colonies of that area. Large crowds of winged ants were coming out and flying together in the open sky.



Ant swarm

It was a unique experience for Myrmica. While flying in open sky it felt very happy. Near to it was flying a smart handsome male ant. Myrmica liked that fellow and both became friends. Now flying together was much more pleasurable.

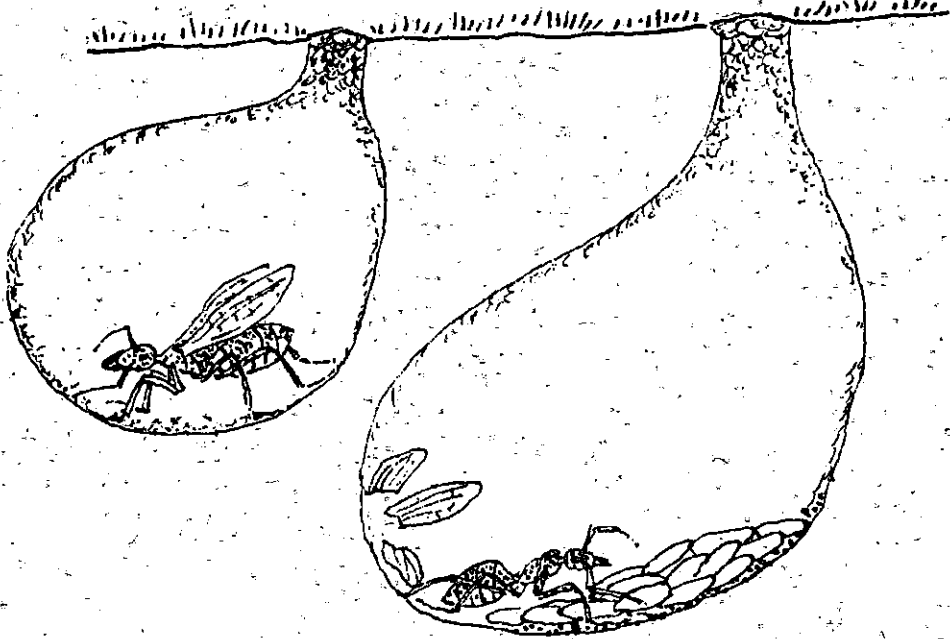
But alas, their happiness was short-lived. They had hardly spent some time flying together when a flock of birds appeared. They caught them brutally and started eating them. Myrmica looked around for its friend but he had disappeared. No one knew whether he was eaten up by a bird or had succeeded in saving his life. Myrmica flew



Lizard catching an ant

rapidly towards the nearby ground and quickly hid itself underneath a fallen leaf. After a little while, it peeped through a corner but the outside scene had become still more dreadful. It saw that many ants were lying on the ground and several dreadful lizards were catching them with their long tongues and swallowing them. Myrmica again hid itself underneath the leaf. It thought to itself, 'If I want to save my life, I need to act quickly'. After thinking a little bit, it started digging the ground underneath with the help of its strong legs. After a short while it succeeded in making a small hole in which it could hide itself. But danger was still there as a lizard's tongue could easily reach there. With a little more effort it deepened the hole and converted it into a small tunnel. The end of the tunnel was broadened to form a small

room. The outside hole was plugged with mud. Now it was safe and there was no danger. Finally Myrmica succeeded in saving its life.”



Tunnel made for protection

“But how long it could remain enclosed? Didn’t it have to go out in search of food?” asked Sād.

“There was a little quantity of food still present in its stomach. The sack under its mouth was also full of food and if needed, body fat could also be utilized. But at that moment, Myrmica was thinking about something else.”

“Besides food, what else did Myrmica need?” asked Ali Abdullah.

“Myrmica took a good but difficult decision. It decided to remain without food for some days. It would lay some eggs and develop young ones. The available food would be utilized for bringing them up. If by that time it could survive, its life could possibly be

saved by the young ants. This way besides saving its life, it will overcome its loneliness also." told Dada Abbu.

"Myrmica's idea was quite intelligent but remaining without food for such a long time was not easy." Ali Abdullah expressed his opinion.

"Truly speaking, it was a courageous decision in which Myrmica had risked its life. After a lot of thinking, it laid only fifteen eggs. It licked them clean and strived to keep them warm. After a few days healthy whitish larvae came out of the eggs. Now Myrmica had to do more work. It started feeding them out of the sack under its mouth. As Myrmica was not eating anything, it became very weak. It not only fed the larvae with fat present within its body but also tore off its wings and utilized those muscles which were meant for their movement. Gradually the larvae grew up and one day they produced silk from their mouths and wrapped themselves within it. Now they had become pupae and did not require any food. During development, larvae never troubled their mother as they did not excrete even once. But before pupation ejecting excreta was necessary."

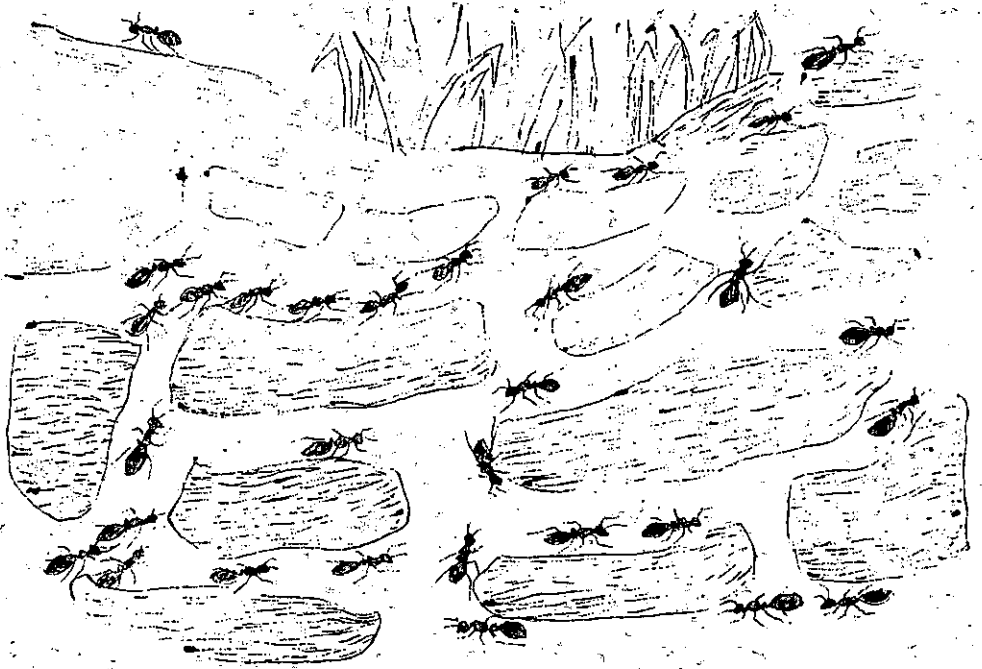
"Poor Myrmica must be in difficulty. How could a weak mother ant do the cleaning?" asked Abid.

"Surely Myrmica was weak but it never lost its senses. It collected the larvae's excreta and dumped it in one corner of its house. Utilizing this as fertilizer, it planted in it the fungal filaments which were still safe within its sack."

"Why did Myrmica do that? In what way was this useful for it?" asked Ameen.

"This was a feeding arrangement for the new ants. Till the new ants hatched out, the fungal farm was ready. Fifteen ants came out of the pupae, ate fungus from that farm and also fed their mother. They opened the plugged end of the tunnel and came out. After some time,

each would come back with something in its mouth which it would put in the mouth of its hungry mother.”



Myrmica's new colony

“As Myrmica got a regular supply of food, it regained its health and after few days it became as healthy as before. Myrmica was very happy. Its courage and hard labour was well paid. Myrmica had not only saved its own life but had succeeded in protecting its progeny. Next time it laid more number of eggs. Now its working was no longer needed. Fifteen ants were there to help. They took the responsibility of taking out the larvae from the eggs and also cared for the pupae. After a few days, the number of ants increased. The small house became crowded. On Myrmica's suggestion, the new ants made the house bigger. There was a special room for Myrmica and several other rooms for keeping eggs, larvae and pupae. Separate rooms were there for storing food. With increasing number of eggs, duties of the house also increased.”

“Myrmica felt that the place where it built its first house was not good. Water could enter inside the house during the rainy season. Suddenly Myrmica thought of a brilliant idea. It asked some ants to go and search another site for the house which should be at an elevated spot and having plantation so that ants could easily get food. Soon such a site was found at a small hillock. Now Myrmica released a scent by which all ants became ready to leave the old house. The ants which had seen the site took the lead. They were also emitting their keiromones which guided the others. All the ants reached the new site and started making their house. First they dug a hole at an elevated point and from there made several tunnels, leading to various rooms. A nice room was made for Myrmica where it could be comfortable and lay many eggs. In several rooms, arrangement was made for keeping eggs, larvae and pupae. More rooms were there for storing food. They had designated places for fungal gardens also.

Now shifting of all things like eggs, larvae, pupae, food etc. was to be done. All returned following the passage they had already made following their keiromones and shifted every article from the old house to the new one. Every body liked the new house and went about their activities happily.

Myrmica felt there was no scarcity of food in the house but there was nothing to drink.” When Abid heard this he asked:

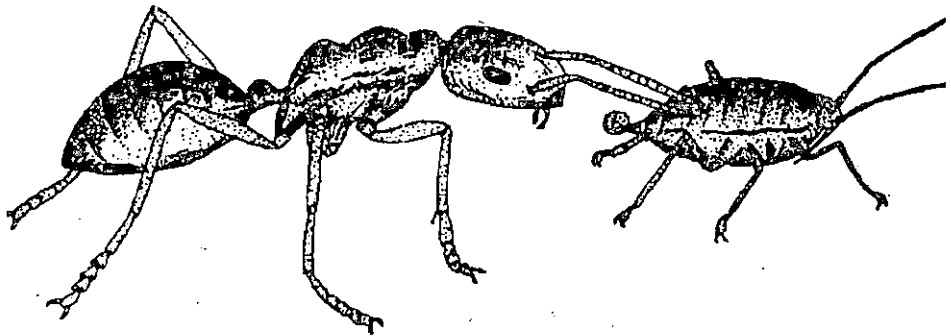
“Do ants drink water also?”

“Ants usually have a liking for plant sap. In plants, there are swellings at the base of leaves from which ants obtain sap. However ants have another technique also to get plant sap which is not only strange but unique also.” Dada Abbu told.

“What technique?” asked Abdullah.

“In various plants there are peculiar insects called Aphids. They are present on leaves, stalks or roots from where they continuously suck plant sap with the help of their syringe-like proboscis. These can

be easily spotted on leaves of raddish, spinach and roots of many plants. Ants like these aphids because they know a technique of extracting sap from them. Plants having aphids will also have ants on them. In several rooms of Myrmica's house, roots of plants had been penetrated. Myrmica asked certain ants to bring some aphids and keep them on the roots. Aphids were brought and kept like pet cows. Aphids would constantly suck juice from the roots and become very fat. Whenever an ant needed some sap, it would go to it and tap its belly with its antennae. Immediately a drop of juice would ooze out from the posterior end of the aphid which would be licked by the ant.



Ant extracting Aphid's sap

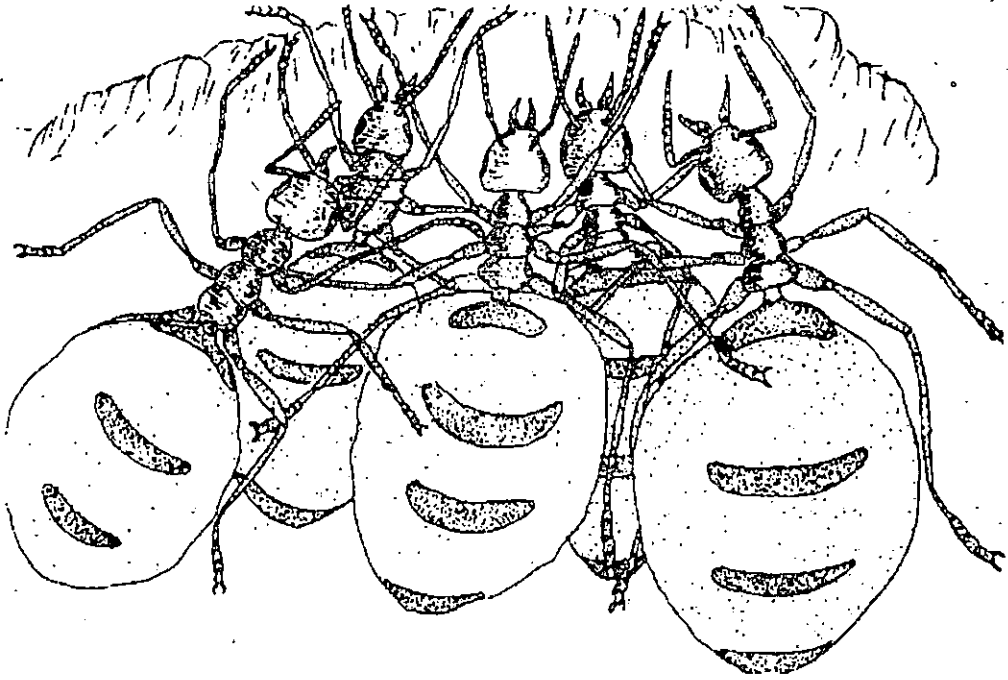
Now besides food, plant sap was also available to the ants. However Myrmica thought the sap was not in sufficient quantity and so it developed another technique.”

“Which was that technique?” asked Ameen.

“Myrmica released a keiromone due to which a group of ants came to it. These ants were somewhat lazy as compared to others. Myrmica informed other ants that these ants had volunteered themselves to become sap-containers.”

“How strange! How could an ant can become a sap-container?”
Sād asked.

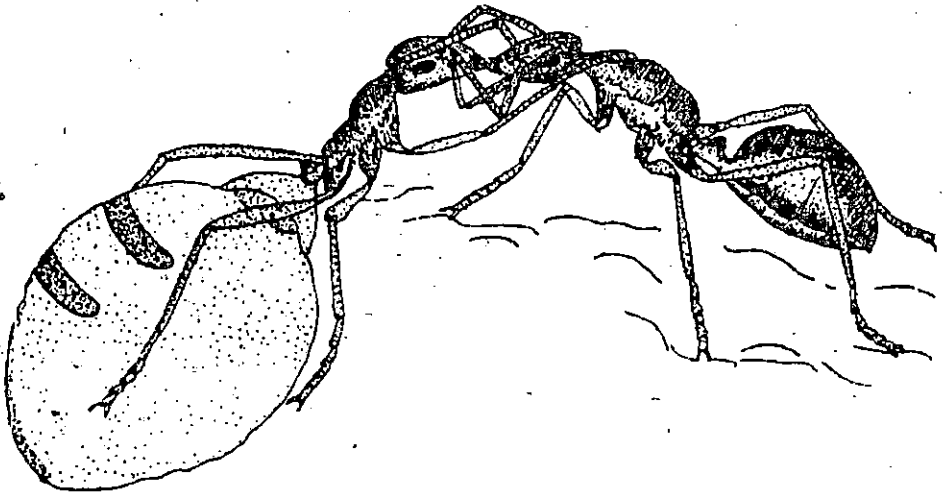
“That means these ants had agreed to remain stationary at one place. Fellow ants will bring sap from outside and would store it in their bellies so that the same could be used at the time of need.”



Sap containing ants

“Filling their bellies is all right but how it could be taken out for use is not understandable.” remarked Ameen.

“Ants go out and continuously bring plant sap. Through mouths, this is stored in the bellies of stationary ants. After some time, their bellies get swelled up, looking like small grapes. Now whenever any ant requires sap, it goes to the sap-storing ant and brings its mouth close to that. The sap-storing ant vomits a little of the sap into the mouth of that ant.”



Worker ant receiving sap from the sap containing ant

“Are their bellies refilled after the stored sap gets exhausted?” asked Ameen.

“After the whole sap gets utilized, the poor ant dies. The reason being the distended bellies could not come to the original position, thus killing the ant.” Dada Abbu told.

This information made the children sad. However their heart admired the ants sacrificing their lives for their fellow ants. Dada Abbu continuing the story further said:

“Whenever *Myrmica* looked at its house, it felt very happy. This was the result of its hard labour, courage, patience and sacrifices. Now its egg-laying speed had increased. Every day thousands of eggs were transferred from its room. Fellow ants would hold eggs in their mouth and take to other rooms and place them properly. They used to care for them well. Larvae emerging out would also be well fed and their excreta would be cleaned. For pupae, there were separate places. Lot of food was stored in several rooms and several fungal farms were also growing. In one room there were aphids while sap-storing ants

were hanging in the other room. In short, the house was full of amenities.

Now neither this house was ordinary nor Myrmica. The house had changed into a vast colony, having all the necessities of life. Myrmica was now the Mother Queen of this colony. Whenever it would look at its colony, it would thank Allah Who granted it excellent qualities. Often it remembered its own mother also who had advised it to fight any crises with courage and aspiration, without being confounded or perplexed. It remembered how by making a small tunnel it had laid the foundation of its new life. In the beginning, the colony had only fifteen ants who were brought up with hard labour, love and courage and now by the grace of Allah it was the Mother Queen of a vast colony.”

“Now perhaps after some time Myrmica, like its mother, could be in a position to order winged members of the colony, after boosting their morale, to leave and reach far and wide on this land to establish new colonies and enlighten their mother’s name.”

