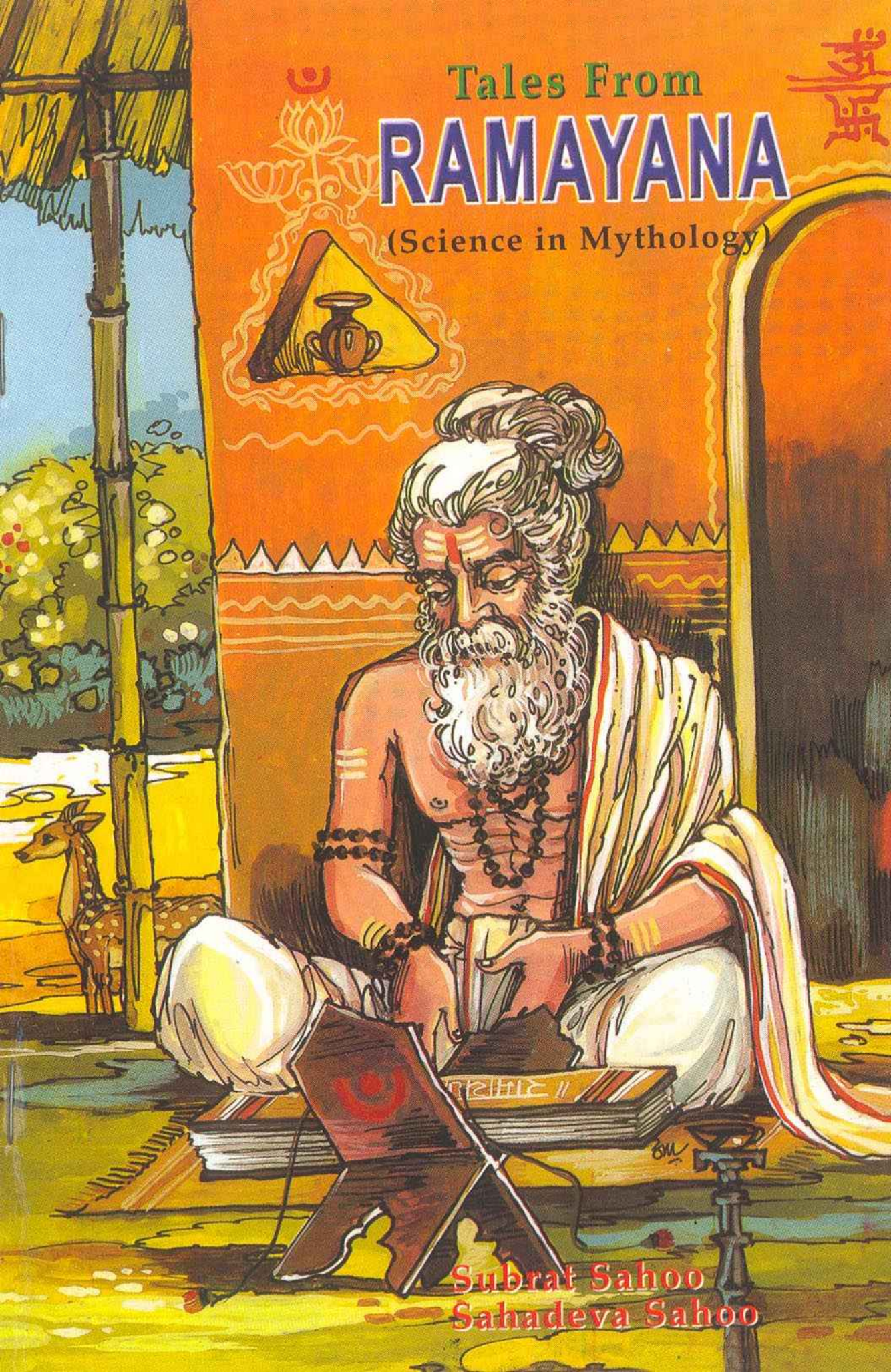


Tales From **RAMAYANA**

(Science in Mythology)



Subrat Sahoo
Sahadeva Sahoo

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Gyanajuga Publications
Bhubaneswar

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First published in 2001 by
Smt. Susama Bisoi on behalf of
Gyanajuga Publications
N-6/428, I.R.C. Village
Nayapalli, Bhubaneswar
Phone No.: 552091

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Printed and bound in India
By **Creative Off-set**
N-6/428, I.R.C. Village
Nayapalli, Bhubaneswar
Phone No.: 552091

Cover Design : **Baladev Maharatha**

D.T.P. : G.D. Moharana & S.K. Behera

ISBN – 81 – 87781 – 30 – 0

Title : Mythology

Price : **Rs.17.00** (Rupees Seventeen only)

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Sraban Kumar and Missiles

That was a time when our country was full of forests. Rishis lived in the forests. A rishi is a sage who is wiser than ordinary men.

It was a period when kings ruled different lands. Ayodhya was one such kingdom. Dasarath was the king there. When he was a prince he was careless in one of his shikars. He got a curse for his carelessness. The curse was that he would not see his son at the time of his death. The rishi couple that cursed Dasarath were the parents of Sraban Kumar.

Sraban Kumar was a very obedient child. He loved and respected his parents. They were blind. Sraban Kumar helped his parents in taking bath, doing daily cleanings, taking food and going to bed. He collected fruits and roots for their food. He had made a *bahungi*. When one wants to take a heavy load one divides it into two halves and uses a

Bahungi. Bahungi is made of a bamboo pole. When hung on the shoulder its two ends take almost two equal loads. Sraban Kumar carried his father and mother on two sides of his Bahungi and took them to places. He carried them wherever they wanted to go. He found pleasure in serving his parents.

Dasarath then was a prince of Ayodhya. He was a brave young man. He was not afraid of wild animals. Once he had gone to the jungle for a shikar.

Dasarath was an expert hunter, a shikari. He was able to know presence of an animal from the noise it made. From a long distance, the animal might not be visible. If he could hear the sound, that was enough to hunt it. He would aim at the source of the sound and hit the animal. He also knew from the sound what animal it was. Sometimes he went wrong, and could not judge the sound properly.

That day he went wrong. Dasarath had been very worried. He did not get any animal.

Some time after, he heard a sound. It seemed, an elephant was drinking water. The river Saraju was at a distance. He thought, an elephant was taking water.

The truth was that Sraban Kumar was taking water for ashram. The jar was making noise when water entered its narrow neck.

You can hear this noise if you put a pot with a narrow neck inside a bucket filled with water. Allow the water to get into the pot,



you will hear a noise similar to what Dasarath heard.

Dasarath thought, the sound must be of an elephant, taking water with its trunk and pouring into its mouth.

It was dark in the forest. Dasarath, the prince, thought it was a chance he should not miss. Moreover it was an elephant. He immediately shot an arrow at the direction of the sound.

Sraban Kumar was pressing the mouth of a jar down into water. That way water could enter the jar. Otherwise an empty jar floats on water and water does not get into it. He was bent towards water when Dasarath shot an arrow. The arrow pierced his chest.

Dasarath went ahead to the spot to see if the elephant was dead. When he went nearer, he saw it was not an animal. It was a man. He got to know that he was Sraban Kumar, the son of a rishi. Before Sraban Kumar breathed his last, he made a request to

Dasarath. He should take water to his parents. They were thirsty.

Dasarath was afraid. He was afraid of rishi's anger. He could not think how he would tell the truth to Sraban's parents. But he had to tell when he carried water to the rishis. The blind parents broke down at the news. They were very, very angry. They were about to curse Dasarath when he fell flat at their feet. He begged them to be kind to him. Having known that it was Dasarath, the Prince of Ayodhya, their anger was lessened, but it did not go away. Dasarath prayed to them to consider his prayer. He said, it was not his intention to kill Sraban Kumar. He



touched the feet of Sraban's parents and begged to be forgiven. The old sage couple could not forget their anger fully. They said, "As you have left us without our son and we cannot see his face when we die, so also you suffer. You would not see your son Ram when you are in your death bed."

Ram was in exile when Dasarath died. Therefore, Dasarath could not see his son at the time of death.

The cause for this sad event was his arrow. His arrow could detect the sound and its source. Dasarath was not to wait till he saw the target. It was enough for him to hear a sound and send an arrow.

The arrow of Dasarath was a homing device. We should know the meaning of the word, *homing*. It means guiding or directing homeward or to a destination, by some mechanism. A modern missile is a homing mechanism. It has in its head a listening machine, backed by a computer. The listening machine is a membrane. The membrane

makes movements when the sound waves beat it. These movements become electrical signals and go into the computer, which guides the missile in the direction of the sound and then makes it hit the target.

Like sound-seeking missiles there are heat-seeking missiles. The aeroplane engine radiates heat. This radiation comes in form of infrared ray. The missile has an infrared sensor, it senses or detects infrared rays. Once the sensor finds an infrared ray within its limits it follows the ray till it strikes the source of the ray.

You may ask, why then does it not go to the sun, which is the hottest ? Infrared sensor has a limited range. Its advantage is that it can see in the dark. If you miss the aim by a metre this way or that way, it will still hit the target.

Hanuman and the Beans

Hanuman was the greatest devotee of Sri Ram. He was the most powerful of all warriors in the Ramayan war. Yet he was very humble before Ram. When he was a child, he showed his strength. Once he saw the Sun rising in the morning. He thought, it might be a red fruit. He jumped and took it under his arms. You can imagine his strength.

Ram defeated Ravan, killed him and put Bibhisen on the throne of Lanka.

Bibhisen celebrated his rise to the throne with a very big feast. Sugrib's monkey soldiers sat in lines. They were so many of them that the entire field was covered with monkeys. Bibhisen also asked Hanuman to take his seat.

Items were served. There are many varieties of curry. One of them was a curry of beans. Monkeys liked it very much. Beans

come in pods. Generally two or three seeds are in a pod.

Suddenly one monkey pressed a pod and a seed jumped out of it. It was a fun for him. He pressed another pod. He gave more force. This time the seed went higher.

The monkey sitting near him was watching it. He thought the bean seed was showing off. He could jump higher than the bean seed. He jumped.

The monkey sitting next to him wondered what was the matter. He thought, it must a jump show. He jumped. He went up higher. Then the fourth monkey thought why should he fall behind. He jumped still higher.

In this manner monkeys jumped one after another, higher and higher. It was a funny sight. Every one jumped higher than the earlier one. If one jumped two metres high the other jumped three metres high. Some went 10 metres and some others 20. Ram laughed at the scene. Hanuman was sitting silently. Ram remembered Hanuman's flight

to Lanka and how he had crossed the ocean in one jump.

Ram asked Hanuman, "Why don't you take part in this competition?"

Hanuman was humble and said, "My lord, I do not jump without any purpose."

Ram gave a lotus flower to Hanuman and said, "Take it with you and give it to Sun, the God of Light. Give my regards to him."



Hanuman was happy. He prepared for a jump. Other monkeys looked at him. They left their food as it was. The leaf plates were with some food. They stood up to see Hanuman's jump. Hanuman jumped with so much force on the floor that lot of dust was raised. It was a cloud of dust. Nobody could see others. By the time dust settled, Hanuman was not visible.

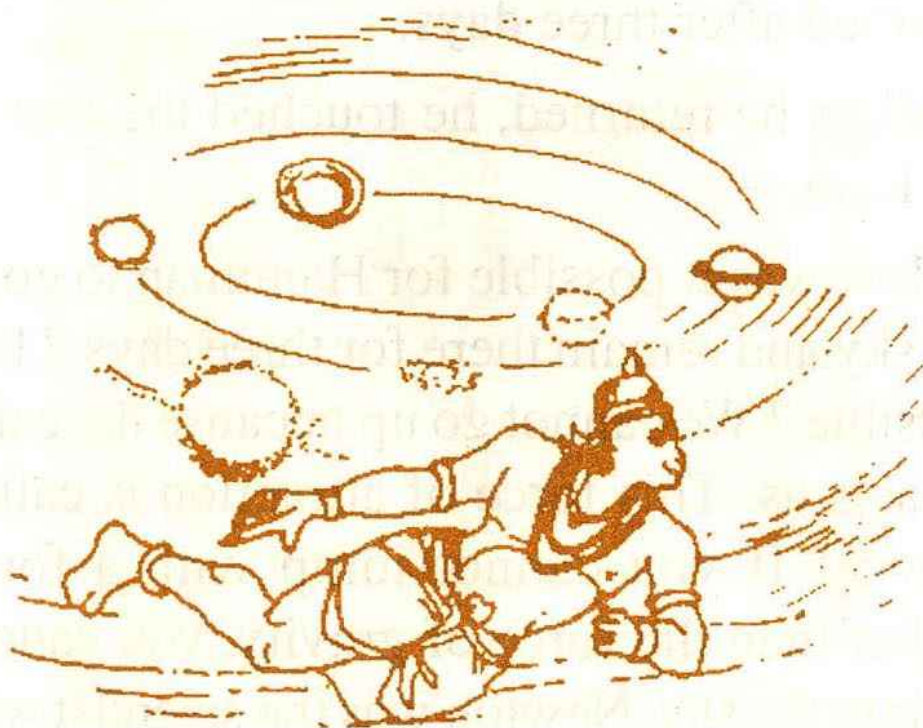
All the monkeys stood in silence. They forgot the food on the plates. They waited for return of Hanuman. But he was not seen for next three days. The story is that he returned after three days.

When he returned, he touched the feet of Sri Ram.

How was it possible for Hanuman to go to the sky and remain there for three days ? Is it possible ? We cannot go up because the earth attracts us. This force of attraction is called gravity. If you cannot jump with a force higher than the force of gravity, you cannot fly into the sky. Newton was the scientist who

gave the rules of gravity. He also calculated how much force was required to escape the gravity.

The earth is round like a football. It is rotating around its axis. It is attracting everything towards its centre. If we throw a stone it goes some distance and then falls down on earth. If we can throw the stone with a force higher than gravity the stone may fly away and not return to the earth. Newton calculated that speed as 27,200 kilometres per hour or more than 7 kilometres per second. But Newton could not test what he

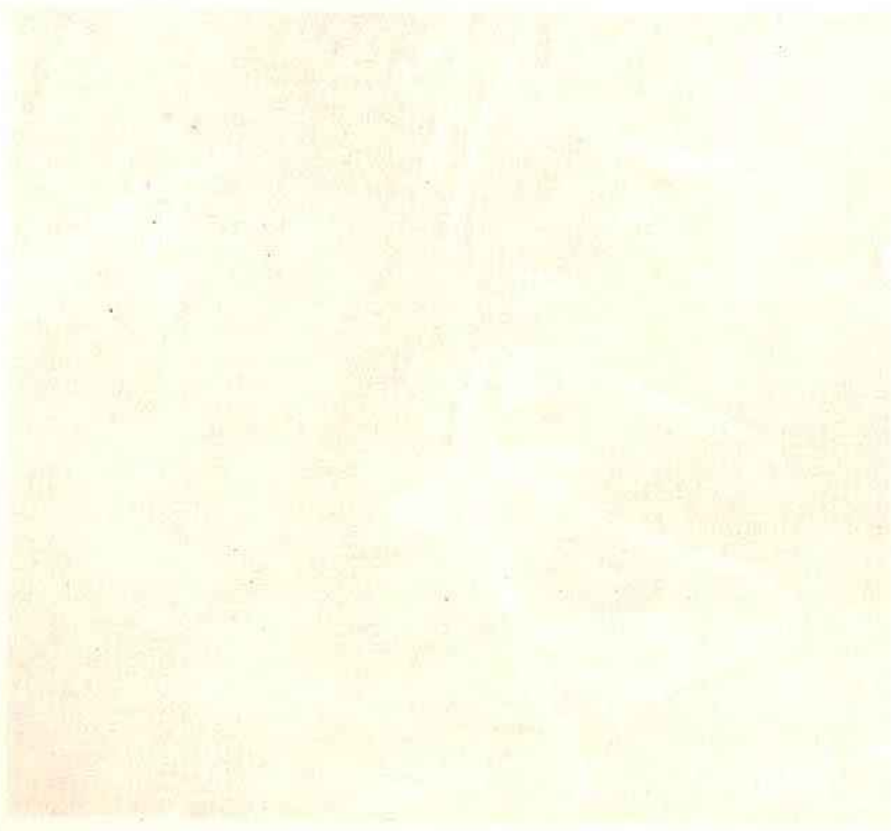


said, because he had no powerful fuel to drive a vehicle at that speed. After the second world war, new fuels were discovered and rocket was made. If the rocket is given that speed and after going up is made metre horizontal with the earth's surface it will become a moon, we call it a satellite. If we give it a higher speed, it will escape the earth's gravity and go towards the sun.

Hanuman jumped with the speed of a rocket. When rocket engine is fired it leaves a cloud of smoke. Hanuman left a cloud of



dust. The fire coming out of the engine pushes the rocket in the opposite direction. Hanuman could jump when he beat the earth with his feet. The earth threw him up as a reaction. Hanuman went up like a rocket, but he was not burnt up in the air. When a vehicle goes at high speed against air it burns itself. Hanuman did not get burnt. Hanuman's body might have tolerance against fire, as a satellite is given a fire-resistance coating.



Kumbhakarn Slept for Six Months

Ravan, Kumbhakarn and Bibhisen were three brothers. They were mighty warriors. Still then they were not happy with their strength. They wanted more strength.

To get the blessings of Brahma they sat in prayer for a long time. Brahma was satisfied with their prayer and appeared before them.

Kumbhakarn had once defeated Indra. He saw Kumbhakarn praying before Brahma. If Brahma grants any boon, Kumbhakarn will become more powerful and a danger to all gods, Indra thought.

He thought of ways to stop it. He remembered Goddess Saraswati. Saraswati has the power over everybody's speech. She controls what to say and how to say. Indra prayed to Saraswati. She should sit in the throat of Kumbhakarn and say what he should ask. He wished that Kumbhakarn should not

ask for any boon that would make him still more powerful.

Saraswati said, "I understand what you want. Leave it to me. I will do the rest."

When Kumbhakarn spoke to Brahma, he said, "Oh! My Lord, bless me that I will have a very good sleep."

Brahma said, "I grant." Ravan hurried to Brahma and prayed to Brahma "Oh! My Lord, is it the way to give a boon ? A boon generally does good to the candidate but this boon will do him harm."

Brahma said, "I have already granted the boon. I cannot take back what I have given. But I can make a correction. He will sleep for six months at a time. Then he will get up for one day. Again he will go to sleep for six months. He will be undefeatable when he gets up for a day. But if he is woken up untimely, his life will be in danger."

In the war with Ram, Ravan lost thousands of his men. At the end he thought he would

ask Kumbhakarn for help. But that was his period of sleep. Kumbhakarn would not wake up himself. When he used to get up he would eat so much as to last for another six months.

Kumbhakarn would not be easily woken up. Ravan made lots of efforts. He called for all the sound making instruments and made loud noises. Men poured ice on his body. Many blew conchs in his ears. Soldiers were asked to bring big stones and logs of wood



and throw them on his body. An elephant was brought and was made to walk over him. And yet Kumbhakarn did not get up. Rather he snored more.

Then Ravan's men asked each other what they did the last time Kumbhakarn woke up. Many tasty and warm items of food were kept ready near him before he could get up. So they brought cart-loads of tasty food and placed them near his nose. Last time he had taken so much food ! It was equal to six months' eating, with four meals a day. He could eat so much in one sitting.

The smell of food entered the nose of Kumbhakarn and he woke up. He had the whole food at one go.

When he finished his meal, he looked up. He saw Ravan before him and asked why he was there. Ravan told him what had happened and how Ram was killing his warriors. He wanted him to fight Ram. He had difficulties and loss at fighting with Ram. He had suffered at the hands of Ram and Laxman.

Kumbhakarn went to war with Ram and Laxman. He killed many soldiers in Ram's army. But in the end he was killed by Ram's arrow.

It was a condition of Brahma's blessing that if Kumbhakarn got up earlier than due his life would be in danger. That is what happened.

In any story, there are two things. One is the reality around the author and the other is his imagination. He mixes the two and makes the story interesting. The hero sleeps for six months and gets up only at the smell of food. If he gets up in due course he cannot be defeated. Had the author seen any event to get these ideas ?

Do you see any frog in the winter ? Or bats ? No. Where do they hide ? They go underground and sleep. Frog, snake and similar animals get under big stones or a log of wood. They squeeze into small gaps. When we lift the stone or the log we see many of

these animals crowded together, one above the other, as if they have no life.

When winter comes bats get into the holes in the trees or into the inside of the temple top or a dark corner of our house or a dark cave. Hanging their heads down, they go to sleep. The temperature of their body drops very much. You cannot feel their heart beat. When the warm sunshine falls and flies fly around, the bats wake up and eat these flies.

Such a long sleep in winter, almost six months, is called hibernation. The verb is to *hibernate*. The author of the Ramayan has seen hibernation of animals and applied it to his hero, Kumbhakarn.

Feel your body. It is warm, because our blood is warm. There are some animals whose blood is not warm. The cold-blooded animals cannot stand the winter. They go underground to keep warm. When rain comes it usually follows the summer. With rains plants grow, insects come into the open; there is plenty of food. If there is untimely rain or

warmth during the winter, these animals get a false sense of rainy season and wake up. As there is not enough food, they remain weak and become food for other animals. Their enemies easily kill them. Kumbhakarn dies because he gets up before time.

There are some animals that sleep in the summer. Snail, some small fish in our ponds and an African crocodile are examples. When you turn earth in your garden, you see a number of dead snails, but they are not really dead. They come back to life in the rainy



season. When there is too hot sun and no rain, they get into soft earth or mud. Snails cover their mouth with their saliva and remain like a dead body. The crocodiles in Africa go into summer sleep. The African summer is very hot. Most of the rivers dry up or have little water. There is no food too. To avoid difficulties the crocodiles get into mud and sleep till rains come. This summer sleep is called aestivation. What is aestivation to summer, hibernation is to winter.

Bali and Ram at War

1 During the time of the Ramayan, Kiskindya was a kingdom of monkeys. All monkeys of Kiskindya came from the family of the God of Wind, *Pawan*. They were born with the strength of Pawan.

Bali was the king of Kiskindya. He had received a blessing from Brahma. We call this godly blessing a boon. Brahma's boon was that anybody fighting Bali face to face would lose half his energy to Bali. It meant, Bali in fight was not only his self, he was also half of his enemy. Therefore, he became stronger than his enemy by his own energy.

With this blessing Bali defeated Ravan. He became very proud. He asked his younger brother Sugrib to get out of his kingdom. Sugrib had many fights with Bali. He was defeated every time, though he was as strong as Bali. Sugrib had to search for a place to

hide. Bali had a curse that if he set his feet on Rusyamuk hills he would lose his head. It was because of this fear that Bali never went to Rusyamuk hills. Sugrib lived there without fear.

Ram was on exile in the forests. In his exile Laxman and Sita were with him. Ravan kidnapped Sita when both Ram and Laxman were out. Ram went everywhere in search of Sita. He met many rishis in the forests. Some rishis advised him to take the help of Sugrib



to locate Sita. Ram and Laxman reached the Rusyamuk hills. Ram and Laxman looked like monks. They had brick coloured dress and long hairs. Sugrib had doubts. They might be Bali's men to get information about his party. Men who collect information for the enemy are called spies, plural of spy.

He sent Hanuman to know who they were. Hanuman was a devotee of Ram. He found that the two monks were really Ram and Laxman. He was so happy that he carried them on his shoulders and took them to Sugrib. Ram and Sugrib became friends. Ram was without his wife and Sugrib was without a kingdom. Ram wanted Sugrib to help him find Sita. Sugrib wanted that Bali should be killed before he could help Ram.

Ram did not fight with Bali face to face. He asked Sugrib to challenge Bali in a fight. When Sugrib and Bali were fighting, Ram hid himself behind a tree and shot arrows at Bali.

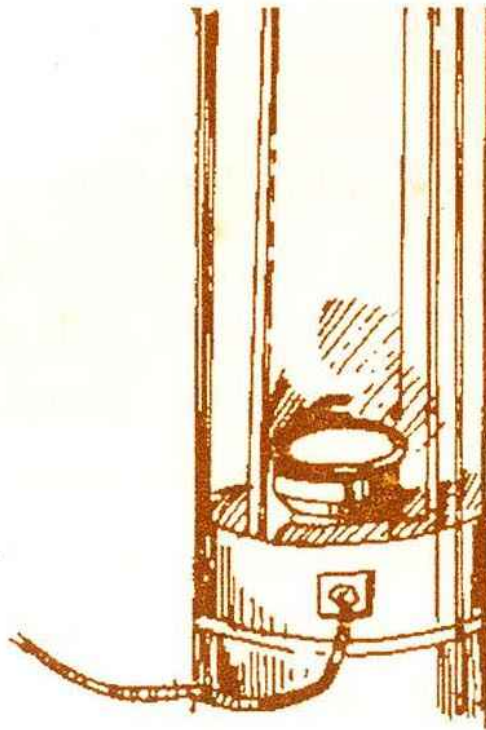
Why Ram hid himself while shooting arrows at Bali ? Ram knew that a face-to-face fight with Bali would reduce his own strength by half and that Bali would gain that extra strength.

Now the question is : can an energy be drawn from another body to yourself ?

This takes us to the question of how energy flows. We know of electricity as a form of energy. The basic units of electric current are electrons. Electrons move on a regular path. Materials, which stop movement of electrons fully, are nonconductors or insulators. Some materials resist a little, some others resist more. But they allow flow of electric current. They are conductors, because they conduct electric current. In resisting they use some electricity. A thin wire in our electric bulb resists till it burns and that burning becomes a light. Silver is a metal, which conducts electricity very well. But it is costly. Copper and aluminium are used as conductors of electricity. Rubber, Cement and wood offer

so much resistance that electric current does not pass through them. Therefore rubber, cement and wood are used as insulator, that is, stopper of electricity. Such differences suggest that there might be a material, which does not offer any resistance at all. That means they conduct electric current freely.

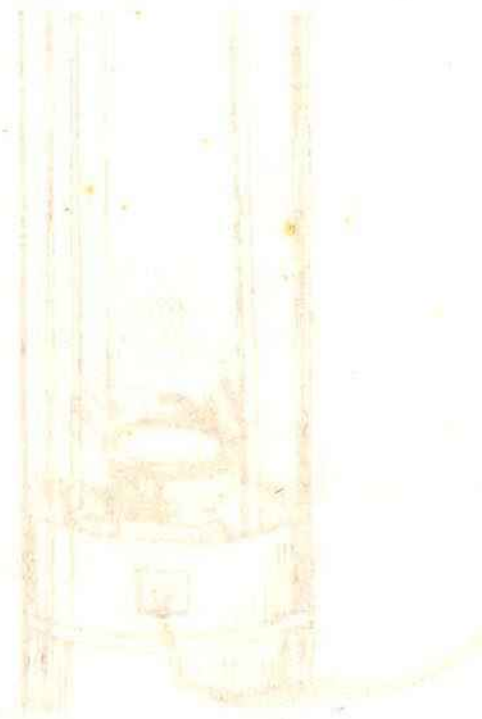
Scientists have found that offering resistance depends on temperature of the materials. Less the temperature the less is the resistance. If there is no temperature, that is, a material is at absolute zero temperature, it



[Super Conductor]

becomes a super conductor. As it offers no resistance it does not become hot. Some energy is lost in heating the conductor.

The boon that Brahma gave Bali made him a super conductor, a conductor that even drew energy from human body. The author of Ramayan has thus gone a step further than electric conductor, he talks of human energy conductor.



Ravan's Ten Heads

Indrajit was the bravest son of Ravan, the king of Lanka. He was called Indrajit because he had once defeated Indra, the king of the heavens. When Indrajit was killed in the war with Ram, Ravan was worried. There was no other warrior like Indrajit. Ravan was also angry. He wanted to take revenge on Ram and Laxman. But there was no body that could face them. So he prepared to go to the battlefield.

When he came out of his fort he saw many bad signs. Nobody gave any respect to him. Outside his fort, monkeys were playing and throwing stones, tree branches and arrows. Ravan had to pass through them. He found Laxman opposing him. Ravan wanted to kill Ram first. When he saw Ram at a distance he was full of anger. He started shooting arrows at him. Ram replied with his arrows.

Both Ram and Ravan shot so many arrows that the sky became dark. There was a cloud of arrows.

No one seemed less than the other. Ram did not have any chariot. Ravan had one. To look equal, Ram had sat on the shoulder of Hanuman. The Gods and Goddesses in the Heaven were looking at the Ram- Ravan war. The fight between Ram and Ravan was so fierce that their own soldiers left their weapons, in stead they looked at their fight. Monkeys of Ram's army and demons of Ravan's army stood in silence to see Ram and Ravan fight each other.

When Ravan was shooting an arrow, Ram was replying and stopping it. When Ram was attacking Ravan was replying with his arrow and stopping it.

They used more and more powerful weapons. Ram also tried more powerful weapons. What to talk of killing Ravan, Ram could not even disable Ravan. Many arrows

from Ram pierced Ravan's hands and legs. But Ravan was so as strong as before.

To fight Ravan face to face Ram needed a good chariot and a charioteer. One who drives a chariot is called a charioteer. Indra saw the difficulty. He sent his charit along with Matali. Matali was his charioteer. Now Ram was more than equal to Ravan. He shot a special arrow that cut off Ravan's head. But to his amazement, another head popped up on the neck of Ravan. He shot anther arrow



and cut the head. No sooner was the head severed than another head appeared. Ram again tried. He cut off the new head only to find a new head in its place.

Ravan was not dying, he did not even appear injured.

Ravan's brother, Bibhisen, was with Ram. Ram asked him what was the secret of Ravan's head. Bibhisen replied, "Ravan has been blessed by Brahma. His life force is in his navel and not his head. Moreover you have to shoot his navel with Brahmastra."

Ram thanked Bibhisen. He also knew that Brahmastra was the ultimate weapon in the world. It was like the atom bomb of the present day. Ram targeted Ravan's navel. As soon as he shot the Brahmastra, the entire area was full of light. A ray of light went straight into Ravan's navel and pierced it. Ravan was dead. He fell down from his chariot.

Do you notice that Ravan had the power to replace his lost head with a new one ? Head,

hand, leg etc. are our limbs. Ravan knew how to grow a limb again. That is called regeneration of limbs. The root from which the limb grows will continue to generate new limbs until the root is destroyed. Bibhisen's advice was to destroy the root.

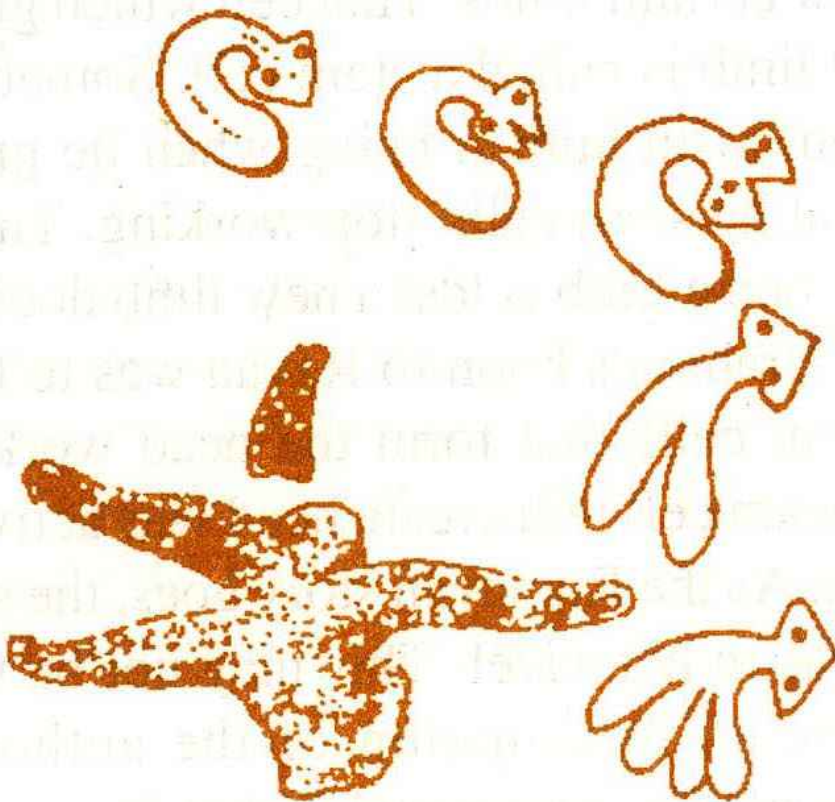
Is it possible to re-generate a new limb in place of lost limb ?

Scientists say, when a child grows into a man or women, certain cells have the power to grow certain limbs. That cell which grows a new limb is called a stem cell. Something happens with human being when he grows old that he stem cells stop working. That is why when a limb is lost a new limb does not grow. Brahma's boon to Ravan was to keep his stem cells that form the head working. The stem cell will create head was active in Ravan. As the Ramayan story goes, the stem cell was in his navel. This may not be true, may be an imagination of the author of Ramayan. The fact remains that Ravan had mastered the art of regenerating his head.

Therefore, he was called Dasanan or ten headed. *Anan* means head.

The author of Ramayan must have seen this fact in other animals. Otherwise he could not have imagined giving Ravan an ability to regenerate limbs.

Some people go to the sea to collect pearl. Pearl grows inside a shell, called the mother of the pearl. These shells are generally found along with starfish. It is called starfish



[Planarian and Starfish]

because of its body looks like a star. It has five arms. People collecting shells a hundred years ago used to lift starfish and tear their arms. They thought, if all starfish died, none would cover the pearl shells and it would be easier to find mothers of pearl.

But the result was opposite. There were more starfish than earlier. Each torn arm became a starfish in addition to original starfish. That means, these people created six starfish out of one. Instead of destroying they were creating.

Similarly, some crabs can regenerate leg and nail if they are lost. House lizard severs its tail when attacked by an enemy. The jumping tail looks like the original animal to the enemy. Soon thereafter the lizard or salamander regenerates a new tail. Similarly when we cut an earthworm it regenerates its head. There is one small animal called planarian, a type of flatworm, about two centimetres long, which lives in water. If you cut its head it will grow a new head. If you

cut it into pieces, the tail piece will grow a trunk and a head, the trunk piece will grow a head and a tail, the head piece will grow a tail and a trunk. More strange is that fact that if you cut planarian head into two and do not allow it to join, each half will soon become a full head. So planarian will have two heads. If you cut its head into 10 parts and do not allow them to join together they will become 10 heads.

Ravan may not have 10 heads at a time. 10 heads will give 10 different orders or judgments. To control them Ravan would have needed a super brain, more like a computer. Three or four thousand years ago the author of Ramayan could imagine that a man may have the ability to regenerate a lost limb. We can today do it only if we master the art.

Setu Bundh and The Art of Construction

In his search for Sita, Ram made friendship with Sugrib. Sugrib sent Hanuman to find out where Sita was. He found Sita in a place in Lanka. Lanka was the kingdom of Ravan. The present name of Lanka is Srilanka or Ceylon. When Ram knew the location, he wanted to go there, defeat Ravan and bring Sita back.

He got the monkey army of Sugrib. In Sugrib's army were famous warriors like Hanuman, Angad and Jambaban. Sugrib, their leader, was also a warrior.

Ram and Laxman moved along with the army in the south direction. They reached Dakshin Sagar or the South Seas. Beyond the sea was Lanka. The South Seas is now called the Indian Ocean. When they reached the seashore they found the vast sea. It was not

possible for a big army to cross it. How would they reach Lanka ? that was the problem.

Making a bridge over a sea was a very difficult task. To make it less difficult the bridge should be at the narrowest point. Ram asked Hanuman to fly over and see where it was the narrowest.

The Ramayan does not give the minimum distance they found. But now we know that the shortest distance is 28 kms from Dhanuskodi of India to Talaimanavur of Srilanka.

Sugrib's army had many heroes. Different warriors had different ability to fly. Gaja would fly 10 yojans, Gabaksha 20, Jambaban 90 and Angad 100 yojans. Hanuman could fly much longer. Yojan was a unit of measuring distance at that time. It was equal to 8 kilometres. Hanuman took the order and surveyed the whole of Lanka.

Sugrib had engineers in his army. Nal and Nil were chief engineers. They were sons of

Biswakarma, the God of Engineering. Nal and Nil were specialists in making roads and bridges.

But those were the days of logs of wood and boulders of stone, they were used to make roads and bridges. Ram asked if it was possible to make such a long bridge with logs of wood, branches of trees and stones.

Nal and Nil assured him that it was possible. But they cautioned, if the entire army wanted to cross the bridge at a time it might collapse.

Nal gave the design and Nil took up construction work. But they faced a trouble. No sooner they put branches and stones than the sea washed them away.

Ram sat in prayer to the God of the Ocean, Varun. Ram was in a hurry. Ram was angry that Varun did not appear soon. He took up his bow, put a special arrow and aimed at the ocean. He wanted to set the ocean of fire so that all water became vapour and the sea

dry. Then his army could cross over to Lanka. Varun panicked. He appeared before Ram and prayed, “My Lord. You have made the rules. You are bound by your rules. If you dry up the seas what will happen to the life in water ? Further the people of both the kingdoms of Lanka and Bharat will have a dry weather. There will be no crop. Your Creation will suffer.”

Ram asked, “What is your suggestion then ?”

Varun replied, “Please take back your arrow. I will help keep all the stones, all the branches of trees in their places and see that the bridge is completed very quickly.”

The construction work was divided into smaller jobs and leaders of different monkey groups were kept in-charge. The job leaders supervised and the overall control rested with Nal.

Monkeys uprooted big trees. They also brought big boulders from the mountains. Nal gave the design: how the stone boulders

would be put in layers, how the branches of trees with their twigs and small branches would be put in between layers of stones and how these branches would bind the stones. When dam reached the water surface, they brought small logs of wood, pieces of branches, grass, twigs, sand and earth. Then they levelled the surface.

It was time to use the bridge. They invited rishis, Gods and Goddesses. The bridge was inaugurated.



Ram and Laxman and Sugrib crossed the South Sea with the army of monkeys. They entered Lanka with the guide map given by Bibhisen.

If you look at the map of India and Sri Lanka in your Atlas, you will see one Adam's Bridge joining India and Sri Lanka. The Bible says all human being have descended from him. The name Adam's Bridge suggests the ancient age of this place. The Adam's Bridge is perhaps all that remains of Ram's Setu Bundh. Setu means bridge and Bundh is embankment or dam. It is equivalent of our



fair weather roads on big rivers. If you visit the Adam's Bridge it will seem like a fair weather road. Only stones are left. Built some 3000 years ago, this is what remains, you may say.

The fair weather roads the government makes during the summer months on big rivers usually have two or three small bridges along with a dam across the river. Such a combination of bridge and dam is called Setu Bundh.

In old days there was no cement and concrete. People used to float some logs of wood and tied them together. It is a barge. The army uses barrels and ties them together to form a pontoon bridge. Before the National Highway 5 was made, buses were crossing rivers in Orissa over a pontoon bridge made up of big boats tied together. Ram's army must have made a pontoon bridge, floating logs of wood tied together with stone chips and earth over them.

You must have heard of a country called the Netherlands. 'Nether' means lower than

the surface. The country is also called Holland. Its land in some areas is lower than the sea. The people of Holland are called the Dutch. The Dutch know the art of recovering land from the sea. They first make a cross bund and separate a portion of sea from the main sea. It is usually near their land. Then they pump the water out. There is an area of about 5 lakh acres, which the Dutch recovered out of the sea. This area is called Zuider Zee. Damming the sea and creating so much land took 18 years. It was completed in 1942. It first became a lake. The Dutch put timber and concrete poles and packed them with stones, mud and earth. They call this type of dam a dyke. The Setu Bundh of the Ramayan is something like a dyke. Since it was made only for the purpose of war with Ravan and there was no repair, it did not become permanent like the Dutch dyke.

What the Dutch have done in the twentieth century the ancient Indians did it 30 centuries ago.

ISBN- 81-87781-30-0

Rs.17