



Dr. Jagdish Chandra Bose (1858-1937) was a great Indian scientist. He surprised the whole world with the declaration that the plants too live like other living beings.

Do you agree to this ? Give reasons.

He also discovered that like other living beings, plants are also hurt and

shocked. By another experiment he also showed that the plants could also be made unconscious (ବିଭୀନ) by some strong **intoxicant** (poisonous chemicals). With his experiments a new world of plant-kingdom was discovered.

In 1902 Dr. Jagdish Chandra Bose wrote many articles about his experiments on plants kingdom. He published them in his book, 'The Reaction of Living and Non-living.'

He also did many experiments to prove that plants act like human and animals. Plants breathe without lungs. They digest food without stomach. They also remain busy in other activities without muscles.

Dr. Bose invented an instrument. It is called 'Optical Pulse Recorder.' It can record the process of **contraction** (ସଂକୋଚନ) in plants. He

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also recorded the internal activities of the plants by this instrument. Thus he showed the similarity in the behaviour of lizards, frogs and tortoise; fruits, vegetables and plants. He also discovered that the plants also **generate** (produce) electric waves and feel tired like all other living beings. During one of his experiments he found that a dying plant released a strong electric current.

He also proved that the carbon dioxide affects the life of plant very badly. Excess intake of carbon dioxide can cause death to the plants. They can be survived by providing oxygen like human beings.

Recall any experiment to support this observation.

By one of his outstanding experiments he proved that the plants also feel intoxication on giving some **narcotic** (substance causing sleep/drowsiness). He also proved that the activities of plants occurred with the energy gathered by the plants. They collected this energy from their surroundings. They stored this energy in them,

In 1918, Dr. Bose developed a new instrument. It was called "Crescograph". It enlarged the movements of the plants ten thousand times. It also noted down the changes occurred in the plant within one minute.

About Dr. Bose's work, a French thinker Henry Bergson said that the Bose's work gave speech to the mute plants. His work helped us to understand the plants world. Now we know what the plants want, when do they suffer, and what pleases them. We can feel the voice and breathing of plants by an instrument. Thus he proved that the plants are living, breathing beings.

Have you ever looked at plants as living being. Do you agree with Dr. Bose ? Why ?

The World Physics Congress was held in 1900 in Paris. Bose presented his views. The people were surprised at his views. He

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explained that the physical events could not be confined to any limit. The difference between the living and non-living was not so vast. It was also not **impenetrable** (that can't be known by any means) as we mostly thought.

The people of those time did not consider his views **authentic** (to be true). They called his views meaningless. So Dr. Bose published his experiments. He also gave practical demonstrations. Then people were greatly amazed.

In 1917 the British Government in India honoured him with the title of "Sir." On his 59th birthday, Bose founded a research institute in Kolkatta.

Dr. Bose believed that the whole nature is full of life and feelings. The nature expresses itself in mysterious ways. We can communicate with it if we understand it correctly.

Do it Yourself

Q.1 (A) Complete the paragraph by filling in the gaps from the options.

(shocked, consider, unconscious, breathing, instruments, declared, intoxicants, late evening)

One day I went to the market. I was _____ to find a man who was lying _____ on the side of the road. I went close to him and checked if he was _____ or not. After that I immediately called 108. The ambulance came soon and the doctor got out of it with his _____. He was unconscious because he had taken some _____. The doctor treated him. He got back his sense and was able to talk. He said how he became unconscious on eating the biscuit given him by a stranger. He thanked me. I _____ myself lucky to be helpful to him.

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(B) Put a ✓ against the characteristics related to plants or animals/human beings.

Characteristics	Plants	Animals/Human-being
• Breathe		
• Move from one place to another		
• Digest the food taken		
• Express themselves		
• Feel tired		
• Become unconscious on giving intoxicants		
• Can talk/produce sound		
• Can grow in size		

Q.2 (A) Say whether the sentences are True/False :

1. Friendly treatment helps the plants to grow better. ☐
2. The plants are not at all similar to any animal. ☐
3. Pollution does not affect the plants. ☐
4. Plants collect their energy from the soil only. ☐
5. We can never see changes in a plant happening every minute. ☐
6. A plant is a store-house of energy. ☐
7. At last people believed that Dr. Bose's views are authentic ☐
8. Dr. Bose lived only for 20 years after establishing a research institute. ☐
9. Man would never be able to talk with plants. ☐
10. Dr. Bose showed a lot of daring in announcing his discovery. ☐

(B) Answer the following questions :

1. Do you believe that Henry Bergson was right when he did the comment ? Why ?
2. How was Dr. Bose honoured ? Why ?
3. Why did people not accept Dr. Bose's views ?

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