ZOOLOGY FIELD TRIPS:
B.Sc (BZC & MZC Entomology students)
Sericulture Farm. Shadnagar
(17 Sep 2019)
The Department of Zoology has a study trip for the Students of B.Sc (BZC / MZC) final year (Entomology) to the Sericulture farm in Shadnagar. We have Visited Three Centers:
1. State Horticulture and Sericulture Office – a Government Institution located in Lingojiguda, Shadnagar under the supervision of Mrs. Nagaratna, district sericulture officer.
2. A private farm – where the larvae are reared from eggs to Pupal stage using Mulberry leaves.
3. A Forest area – where Mulberry plantation and Nursery is located.

In the First place, the reeling of the Silk Cocoons is done. They purchase Cocoons from the private farm. The Cocoons are then separated based on the quality. The Finest quality of silk is produced from healthy cocoons. Each Cocoon produces 1200 meters of silk. Silk produced from 6 cocoons, is woven as one thread which is very soft & delicate, this is used in fine Kashmiri silk sarees. It weighs very less & the Silk is very soft. In some cases 12-15 cocoons are used which gives a rough texture to silk. The Second quality Cross breed cocoons are yellow in color which is usually mixed with other threads. The Third type is Double cocoons which produce Dupian silk. When unhealthy larvae form cocoons, flimsy silk is produced.

In the next step, the larvae are killed inside the Cocoon by keeping them in ovens. The dead cocoons are stored in large trays in big racks in a room. The trays are numbered & dated. Everyday few cocoons are taken for reeling. Around 6 kg of silk is produced by this centre per day. 1kg of cocoons can have around 700 to 1000. Seven kg of cocoons produce 1 kg of silk. Nearly 6000 cocoons are processed here per day. The cocoons are then dipped in hot water which loosens the silk from cocoon. The top silk with glue is removed while heating which is called Basin rejection silk. The cocoons are removed from hot water, once a continuous single silk thread starts coming. This happens after the superficial silk is removed and the fine silk appears. Later, they are introduced in to another area where threading is done. The machine used, consists of 3 levels. The bottom one has fire burning; the second has water basins with warm water where cocoons are placed in groups of 6-12 etc. The third level has rings or hooks to attach the silk & the last has reels over which the thread is woven.

The fine silk is shiny. Students had a beautiful experience to see how much goes behind the beautiful silk sarees & dresses they wear, how a tiny insect brings it out from its labial glands with the substance called Sericin. The experienced members involved in the centre gave their valuable information & tips of obtaining good silk. Mrs. Nagaratna, the sericulture officer explained the economic importance at various levels of production.
SERICULTURE FARM, SHADNAGAR

SECOND INSTAR SILKWORM LARVAE VORACIOUSLY FEEDING ON MULBERRY LEAVES
EXPLAINATION BY MRS. NAGARATNA ON SEPARATION OF BASIN WASTE SILK BY BOILING
FINE SILK OBTAINED AS AN END PRODUCT OF THE REARING CENTRE, READY TO BE SOLD
COCOONS AFTER THE EXTRACTION OF SILK
The final product—Refined silk, ready for weaving.
The Department of Zoology has taken the Students of B.Sc (BZC / MZC) second year (SEC- Apiculture) on a study trip to Apiculture training centre, NIRD Rajendranagar on **24 Sep 2019**. Students were trained in handling the apiculture boxes. The students were able to remove the lids, calm the Bees using a Bee smoker and study the different stages in the life-cycle of Honey Bee. They observed the operation of rotary honey extractor without killing the eggs & pupae of the Bee comb.

The training master Dr. Ravinder Kumar presented the theory in the training centre. He started the session with an interesting question “is honey a shit, spit or a vomit?”. It was a good interaction session where the students clarified their doubts & some could answer his questions.

Mr. Ravinder was delighted with the students’ response. He explained the subject in depth giving the details of Bee rearing. He emphasized the vital role of honey Bee for the survival of Earth & its major contribution in agriculture through pollination. He enlightened us with various products of Bee industry other than honey. Royal jelly, a honey bee secretion is used to nourish larvae and the adult queen bees. It contains complex B vitamins, amino acids, fatty acids, minerals, enzymes, natural antibiotic properties, and antibacterial properties. Royal jelly is known for its anti-aging, cholesterol-lowering etc. Bee pollen is a rich source of vitamins & minerals. Bee wax used in polishing & Propolis – Bee glue known for its anti ageing, anti fungal properties

He also explained how Apiculture can be a small scale industry using a small field. He briefed the students on how to take Apiculture as a profiting industry even on a small scale. He guided them through all the steps involved ranging from loans for start-ups to trouble shooting problems faced during the process. He amazed students by disclosing how loans could be obtained without surety through ‘**Credit Guarantee facility Trust**’. He also explained that state horticulture department is providing 10 Bee boxes at 40% discount for startups. He explained the economics involved also briefing 1 tray could yield two and a half Kg of honey. Each box has 10 trays i.e 25 Kg per box. Apiculture does not need much attention. One or two hours per week will suffice. The students can choose it as a business even after their graduation, because this involves multiple benefits like food safety, food security, better environment, eco balance & biodiversity.
STUDENTS AT APICULTURE TRAINING CENTRE - NIRD (NATIONAL INSTITUTE OF RURAL DEVELOPMENT)

VISUALIZING DIFFERENT STAGES OF HONEY BEE BY DR. RAVINDER KUMAR
THEORETICAL SESSION IN THE TRAINING CENTER

HANDS ON EXPERIENCE
HONEY COMB AT CLOSER VIEW