

Economics of Bee Keeping ° —

The ultimate aim of bee keeping is to get more and more honey in pure form. Besides honey they provide us various items for our benefit. Different products that we earn from honey bee are as follows —

- ① Honey
- ② Bees wax
- ③ Bee Bread
- ④ propolis
- ⑤ Royal jelly
- ⑥ Bee venom

① Honey ° — Nectar, pollen and cane-sugar bearing secretions of flowers are ingested by honey bees, get mixed with the saliva and undergo certain chemical changes due to enzyme action. At this stage cane sugar (sucrose) is converted into invert sugars i.e. dextrose and levulose. At this very time some ingredients of bees are also added to the mixture and reduce the water content. The whole mixture is then collected in the honey sac (crop) until the honey reaches the hive.

as the honey bee reaches the hive this compound is regurgitated in the hive cell as is known as honey.

Chemical composition of honey

- (a) Levulose — 38.9%
- (b) Dextrose — 21.28%
- (c) Maltose and other sugars — 8.81%
- (d) Enzymes & pigments — 2.21%
- (e) Ash — 1.07%
- (f) Water — 17.20%

Storage of honey

After long duration in the stored condition, the honey may be granulated and fermented.

Economic Importance of Honey

- (a) Food value: — 2.1 gm of honey provide as much as 67 K. cal of energy. Its sugars, minerals, vitamins and other vital elements are readily absorbed by the system. Honey may be taken by healthy men as well as those who are ill. It is used in the preparation of candies, cakes and bread.

Medicinal Value : — Honey is mildly laxative, antiseptic and sedative. Generally it is used in Ayurvedic and Unani systems of medicine. It is quite helpful in building up of haemoglobin of the blood and also used as preventive of cough, cold and fever, as blood purifier and as a curative for ulcers on tongue and alimentary canal.

Other uses : — Honey is used in numerous ways. Such as in preparation of bread, cake and biscuits. It enhances their preserving quality. Much amount of honey goes in making alcoholic drinks. In poultry and fishing industries honey is widely used. In laboratory honey is used to stimulate the growth of plants, the bacterial culture, inoculation of seed, of clove, in insect diet and in preparation of poison baits for fruit flies.

Bee Wax

Bee wax is a very useful by-product of bee keeping industry. It is a yellowish to greyish brown in colour and insoluble in water but completely soluble in ether. It is a natural secretion of the worker bees and is poured out

in thin delicate scales or flakes. The various bee waxes differ only due to change in the proportions of some constituents. Large quantities of bee wax come from Apis dorsata.

Bee wax is used in the manufacture of cosmetics, face cream, paints, ointments, insulators, plastic works, polishes, carbon paper and many other lubricants. It is also used in the laboratory for microtomy, with the common wax for block preparation of tissues.

③ Bee Bread :— Bee bread is a ball or pellet of field gathered flowers pollen packed by worker honey bees and used as the primary food source for the hive. It consists of simple sugars, proteins, minerals and vitamins, fatty acids and small percentage of other compounds. It is also called as bee pollen or ambrosia. It is stored in brood cells, mixed with saliva and sealed with a drop of honey. It is harvested as a food for human. With various health claims one of them being that the fermentation process makes it much more

otent than simple flower pollen.

④ Propolis ◦ — Bees also produce a compound called propolis from the sap on needle-leaved trees or evergreen trees. When they combine the sap with their own discharges and bee wax, they create a sticky, greenish-brown product used as a coating to build their hives. It is called propolis, thousand years ago ancient civilizations used propolis for its medicinal properties. Greeks used it to treat abscesses. Assyrians put it on wounds and tumours to fight infection and the healing process. Egyptians used it to embalm mummies. So propolis are used for its healing property.

⑤ Royal jelly ◦ — It is a honey bee secretion that is used in the nutrition of the larvae as well as adult queens. It is secreted from the gland in the hypopharynx of nurse bees. It is widely marketed as a dietary supplement. It is an alternative medicine that falls under the category of Apitherapy.

